FOUNDED IN 1856

RAILWAY AGE

A.A.R. Mechanical and Purchases & Stores Division Proceedings

JULY 9, 1949

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POSITIVE ADJUSTMENT

LONG SERVICE
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WINE

BRAKE BALANCERS

THE WINE RAILWAY APPLIANCE COMPANY...TOLEDO 9, OHIO

UNIT TRUCK • UNIT TRUCK • UNIT TRUCK •

QUALITY-plus

55 YEARS OF SERVICE

RESEARCH EXPERIENCE

MINER
CLASS A-22-XL
FRICTION DRAFT GEAR

W. H. MINER, INC. CHICAGO

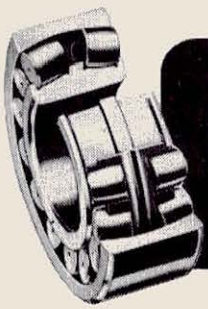
Built by American Car & Foundry Company

THE NEW YORK BOARD OF

760 NEW SUBWAY CARS

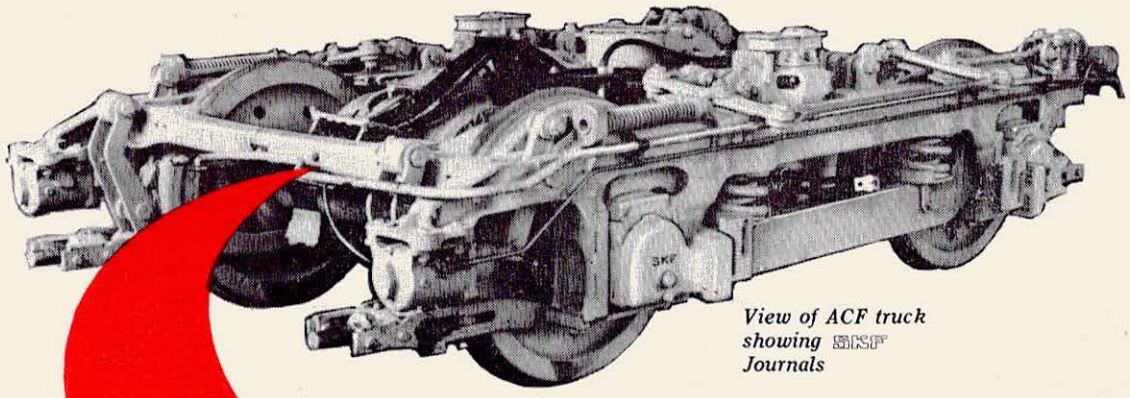
310 CARS ... to be equipped with SKF Saddle-type Journal Boxes

The New York Board of Transportation has purchased 760 new subway cars—representing the largest order on record for anti-friction bearings on subway equipment. 310 SKF-equipped cars will use GREASE as a lubricant in the journal boxes.



SKF
BALL AND ROLLER BEARINGS

Published weekly by Simmons-Boardman Publishing Corporation, Orange, Conn. Executive Offices, 30 Church Street, New York 7, N. Y. Entered as second class matter at Orange, Conn., under the act of March 3, 1879. Subscription price $6.00 for one year. U. S and Canada. Single copies, 5c cents each. Vol. 127. No. 2.



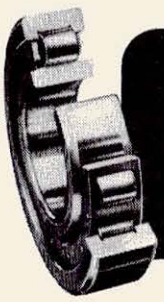
View of ACF truck showing SKF Journals

TRANSPORTATION HAS ORDERED

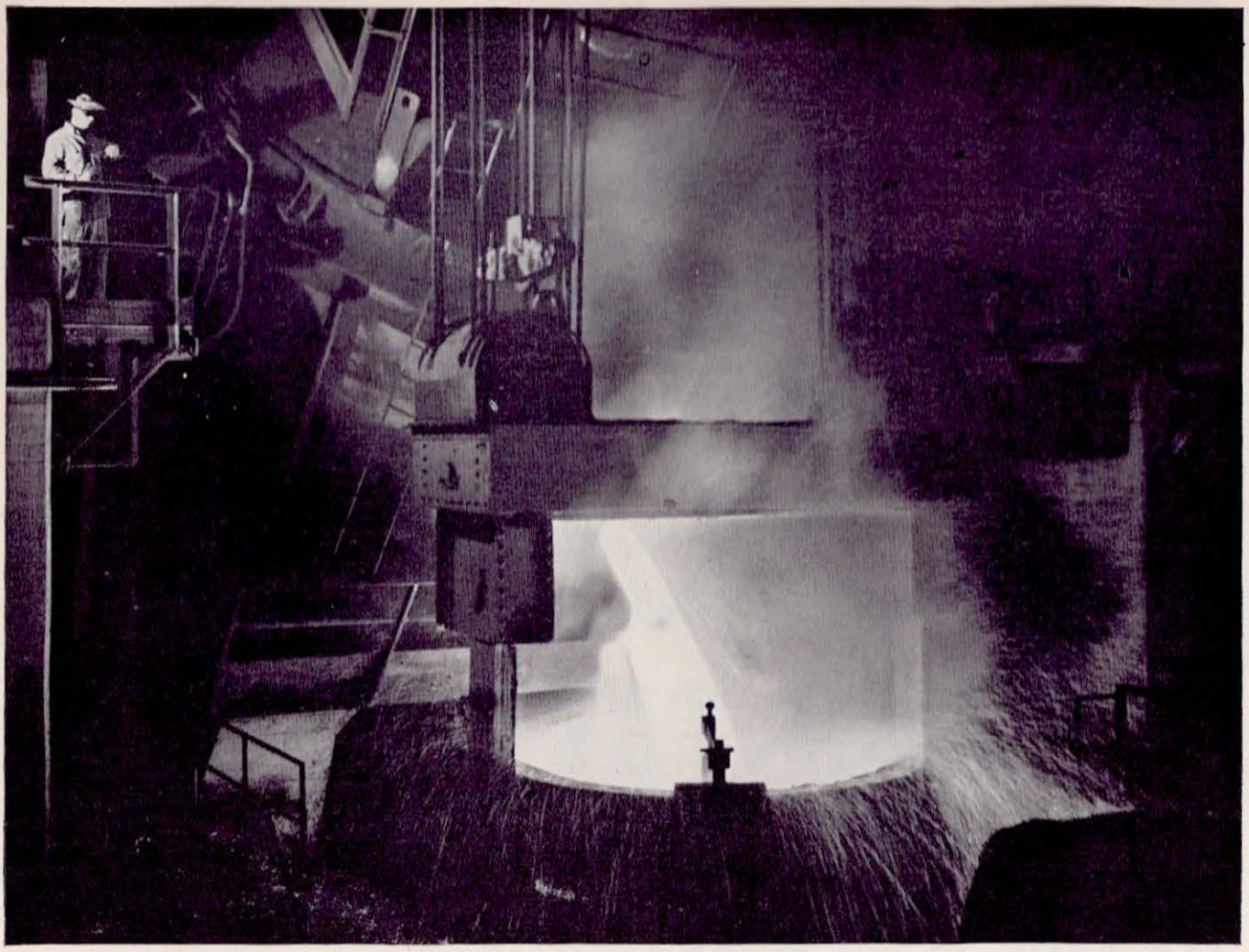
FOR NEW YORK CITY

760 CARS...to be SKF-equipped on Traction Motors and Auxiliaries

All motors and motor-driven auxiliaries are equipped with SKF Bearings. Such engineering foresight assures dependable bearing performance . . . increased availability of equipment . . . low maintenance costs. The result is the last word in subway rolling stock. SKF INDUSTRIES, Inc., Phila. 32, Pa. 6622



SKF
BALL AND ROLLER BEARINGS



70 tons of lower maintenance costs

It's a spectacular sight — 70 tons of white-hot stainless steel gushing out of a giant electric furnace. But there is much more to it than you can see here.

In dozens of applications on modern railroad equipment, durable ARMCO Stainless Steel is providing long, low-cost service. In galley and bar equipment, grab bars, window frames, hardware and decorative trim, this solid, rustless metal assures top resistance to staining and corrosion. Simple cleaning with soap and water usually keeps it looking bright and handsome for years.

In exterior panels and structural parts, corrugated high-tensile ARMCO Stainless sheets increase section-depth and reduce *weight* without sacrificing *strength*. Stainless exteriors stay attractive longer because neither weather nor hard travel affects their hard, shining surface.

Fabrication is no problem, either, because ARMCO Stainless is readily formed, cut, drawn, welded and machined on regular shop equipment.

When you plan new cars or replacement parts, remember there is a special grade and finish of ARMCO Stainless sheets, strip, plates, bars and angles for every railroad need. For complete information on your requirements, get in touch with our nearest district office or write Armco Steel Corporation, 210 Curtis Street, Middletown, Ohio.
Export: The Armco International Corporation.

ARMCO STAINLESS STEELS

ARMCO

The SYMINGTON®

COMPOSITE ARTICULATED JOURNAL BOX LID

For

✔ **POSITIVE SEAL**

✔ **EASE OF OPERATION**

and

✔ **LONG SERVICE LIFE**

- **Ball and socket joint between lid and housing permits full articulation—provides constant, equal pressure on all four sides of the journal box lid face.**

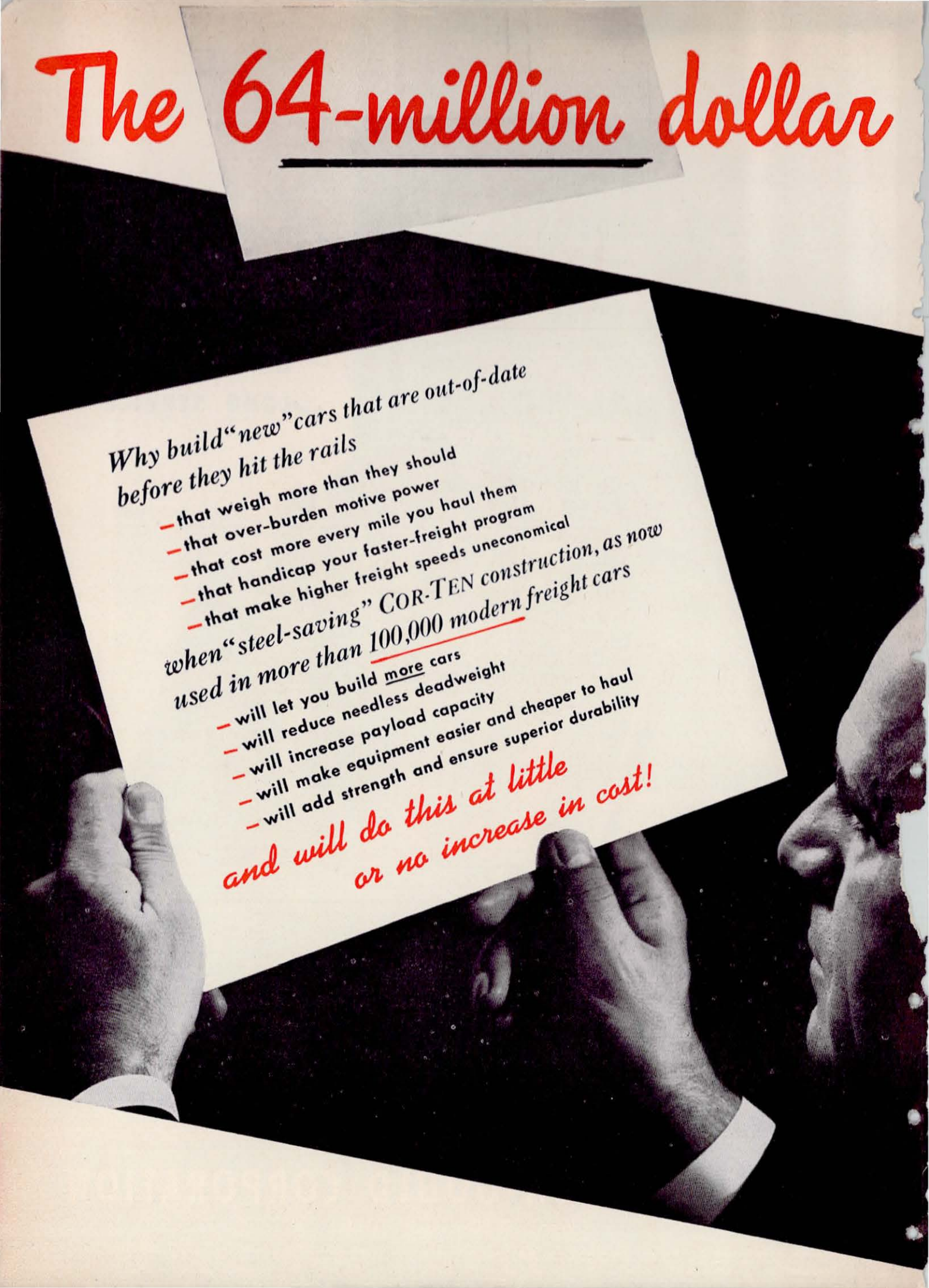
A.A.R. Certificates 1, 5 & 11 . . . Spec. M-120-47

THE SYMINGTON-GOULD CORPORATION

Works: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • *In Canada:* ADANAC SUPPLIES, LTD., Montreal, Que.

The 64-million dollar


Why build "new" cars that are out-of-date
before they hit the rails
– that weigh more than they should
– that over-burden motive power
– that cost more every mile you haul them
– that handicap your faster-freight program
– that make higher freight speeds uneconomical
when "steel-saving" COR-TEN construction, as now
used in more than 100,000 modern freight cars
– will let you build more cars
– will reduce needless deadweight
– will increase payload capacity
– will make equipment easier and cheaper to haul
– will add strength and ensure superior durability
and will do this at little
or no increase in cost!

question for railroad management

IN 1947, freight carrying cars on Class I railroads made 32,182,019,000 car miles. If the weight of each car had been reduced only two tons, the saving effected would be 64,364,038,000 ton miles. Figuring the cost of hauling low, at 1 mill per ton mile, the year's saving, possible with lighter equipment, would have amounted to a total of $64,364,038. Quite a tidy sum when you think of it.

Have you considered what it is costing *your* road if you are passing up the savings that lightweight equipment can assure?

You may have to pay a little more for COR-TEN lightweight construction—but you pay it only *once*—whereas these lighter COR-TEN cars pay back substantial savings year after year after year.

To date, 36 leading Class I railroads have recognized the economic significance of these facts and have put more than 115,000 lightweight COR-TEN cars into service. These roads are getting an actual share of that 64 million dollar potential saving. Is *your road* getting its share.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
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U·S·S HIGH STRENGTH STEELS

U·S·S COR-TEN · U·S·S MAN-TEN · U·S·S MANGANESE-NICKLE-COPPER

UNITED STATES STEEL

Every drink a reminder . . .

With every drink of water your passengers are reminded of your hospitality — when you print a cheerful greeting on your AJAX* Cups. Thousands of times a day these little messages spread good will, advertise your facilities, tell about your system in a way that can't be missed.

Imprinting is inexpensive too . . . and can be given any kind of art treatment you want, in black or color. Write us about costs for special handling of *your* imprint.

Open-mouthed AJAX Cups dispense one at a time . . . are easiest to hold and use even on swiftly moving trains.

*. . . or on the familiar round, flat-bottom AERO Cup.

UNITED STATES ENVELOPE COMPANY

Paper Cup Division • **Worcester 5, Massachusetts**

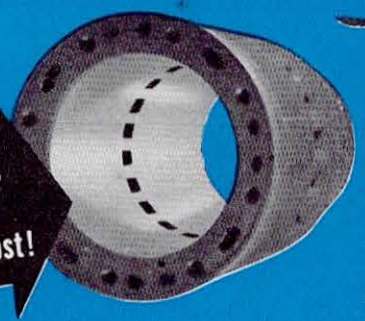
Los Angeles Division *San Francisco Division*

AERO® AJAX® Paper Drinking Cups

Photo Courtesy Nickel Plate Railroad

Cut the Cost... WITH PORUS·KROME*

PORUS·KROME saves wear where wear costs most!



EVERY DIESELIZED RAILROAD in the United States is using PORUS-KROME. It cuts back the cost of cylinder wear. How much savings result is determined by whether the liners were processed when new, or later.

That's why, more and more, the major roads are specifying PORUS-KROME as standard equipment in new locomotives.

All the Nickel Plate's passenger Diesels were delivered with PORUS-KROME cylinders. None of them need ever be over-sized.

Gone is the cost of reboring. Only standard cylinder parts need be carried. That means less money tied up in inventory and stores space. Handling costs drop in proportion.

So does shoptime, because PORUS-KROME wears as much as four times longer than unprocessed liners When finally a change out is needed —Re-*Standard*-Size! That's today's way—as modern as Diesels themselves. Original bore dimensions are restored in all liners, each time they are processed with PORUS-KROME.

PORUS-KROME is available through most locomotive builders. Or contact us directly—today.

★ ★ ★

**PORUS-KROME* is a dense, hard, wear and corrosion-resistant chromium, produced by the Van der Horst Corporation of America, and which gives working surfaces an infinite number of tiny oil-retaining reservoirs for perfected lubrication.*

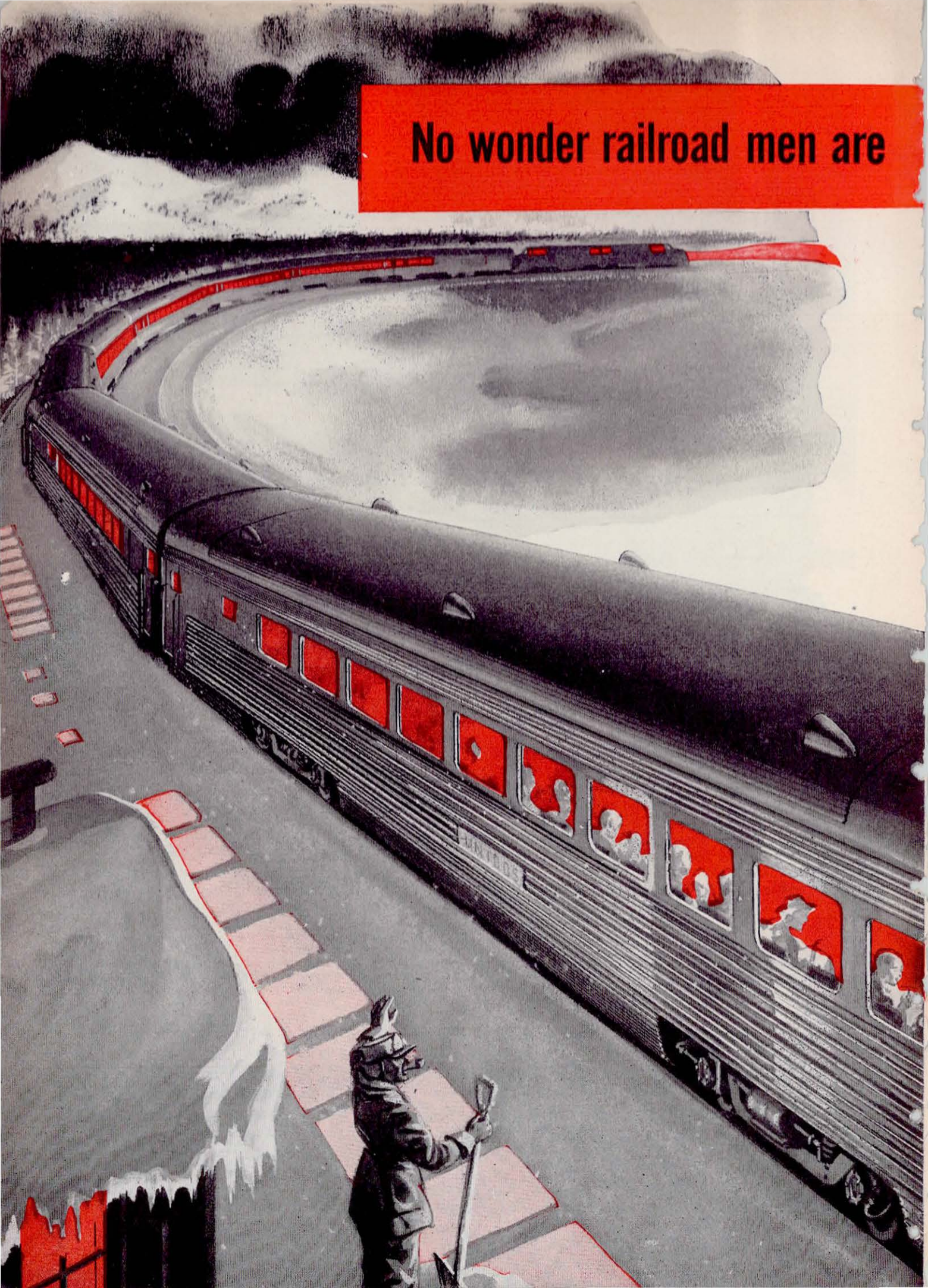
VAN DER HORST CORPORATION OF AMERICA • OLEAN, N. Y.

U. S. PATENTS 2,048,578, 2,314,604 and 2,412,698

PORUS - KROME

Good for the Life of your Engines

VAN DER HORST TRADE MARK


No wonder railroad men are

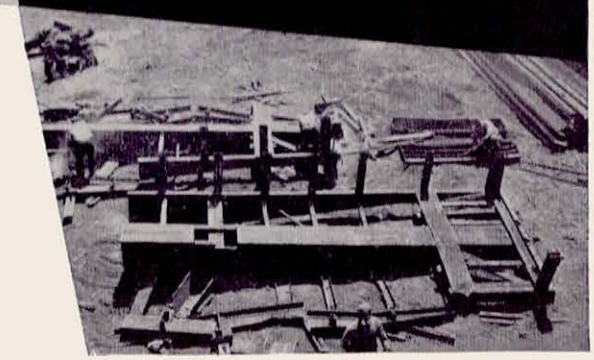
WEATHER VAIN!

INSUTAPE and WOVENSTONE make it possible for railroad mechanical and operating personnel to *do* something about the weather—inside cars. No matter how long trains may be, Insutape and Wovenstone protect piping from ice and snow, sleet and slush—protects against heat losses as steam courses through pipes the full length of the train. It's always fair weather when Unarco insulation and piping get together! Weather-proof, ballast-proof and fire-proof, Insutape and Wovenstone have provided trouble-free, day-in, day-out service on thousands of cars and locomotives for years. Both can be applied, removed for pipe inspection and reapplied in a jiffy!

UNARCO

UNION ASBESTOS & RUBBER CO.
332 S. Michigan Avenue, Chicago 4, Illinois
New York • San Francisco

what's the best way...



to slash costs of box car scrapping and reclamation?

. . . make the fullest use of the oxyacetylene flame and electric arc

Why? Because Airco's specially trained railroad representatives working closely with railroad men have often been able to suggest some improvement, or additional application, to provide the railroad with scrap material in the most salable shape quickly and economically.

Further, the full capabilities of oxyacetylene flame and electric arc equipment can be realized for reclaiming, for example — in the case of box cars, such items as: brake heads, coupler knuckles and throwers; and for fabricating from scrap plate; roadway signs, coupler raisers and other items.

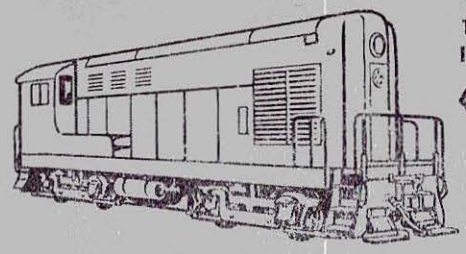
Get the most revenue from your old scrap. Call in an Airco Railroad specialist. He will be glad to survey your scrap problems and assist you in setting up the most economical and efficient scrapping procedure for your road. Write or phone your nearest Airco Office today, (In Texas: Magnolia Airco Gas Products Company ... On West Coast: Air Reduction Pacific Company).

Costs Come Down Under The Airco Plan

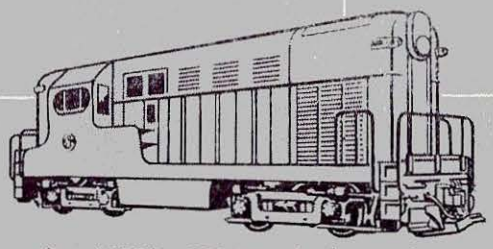
AIRCO **AIR REDUCTION**

Offices in Principal Cities

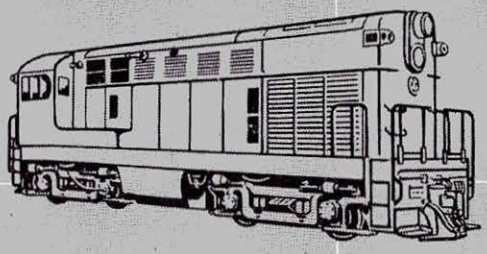
Headquarters for Oxygen, Acetylene and Other Gases...Carbide...Gas Cutting Machines...Gas Welding Apparatus and Supplies...Arc Welders, Electrodes and Accessories



1000 hp. 120 ton switching locomotive



1500 hp. 120 ton suburban and general purpose locomotive



2000 hp. 125 ton heavy duty locomotive

Diesel Locomotives by FAIRBANKS-MORSE for every yard and road service

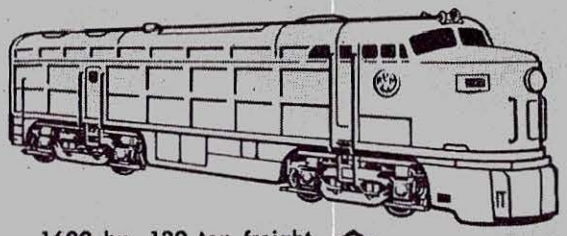
The recent advent of the line of "Consolidation" Locomotives —combined with the well established Fairbanks-Morse locomotives for yard transfer and suburban service—makes Fairbanks-Morse the source of the *world's most complete line of diesel locomotives.* For every service, for every ruling grade and speed, there is a Fairbanks-Morse Opposed-Piston Diesel that best meets your requirements. Fairbanks, Morse & Co., Chicago 5, Ill.

When it comes to locomotives . . .

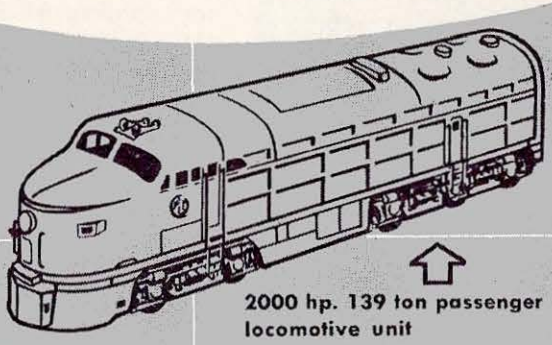
FAIRBANKS-MORSE

A name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • STOKERS • SCALES • MOTORS
PUMPS • GENERATORS • RAILROAD MOTOR CARS and STANDPIPES
FARM EQUIPMENT • MAGNETOS

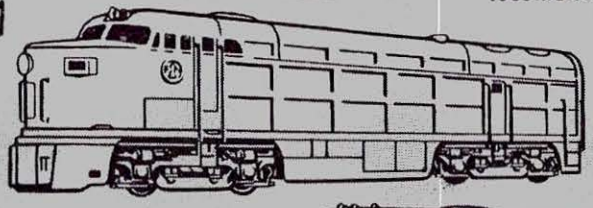


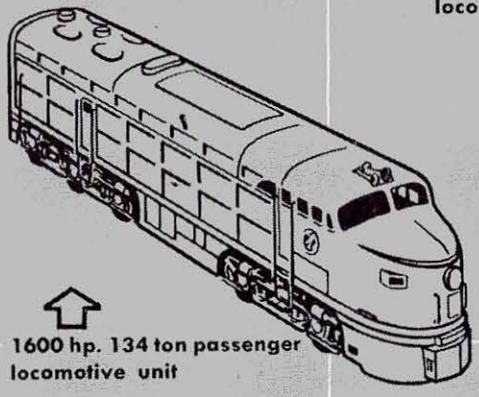
1600 hp. 120 ton freight locomotive unit



2000 hp. 139 ton passenger locomotive unit

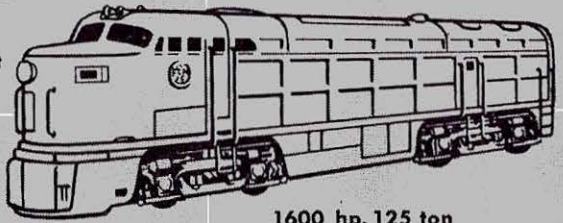
2000 hp. 123 ton freight locomotive unit



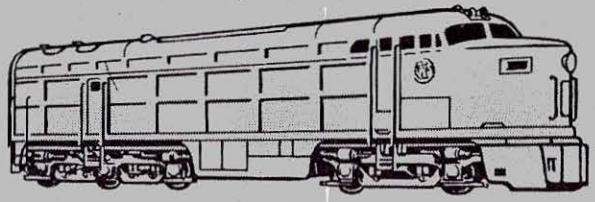


1600 hp. 134 ton passenger locomotive unit

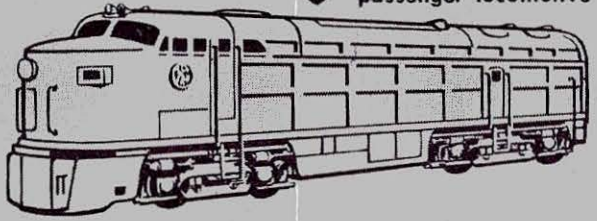
2400 hp. 126 ton freight locomotive unit



2400 hp. 142 ton passenger locomotive unit



1600 hp. 125 ton combination freight & passenger locomotive unit



COST PER FOOT OF TAMPING GOES DOWN with BARCO

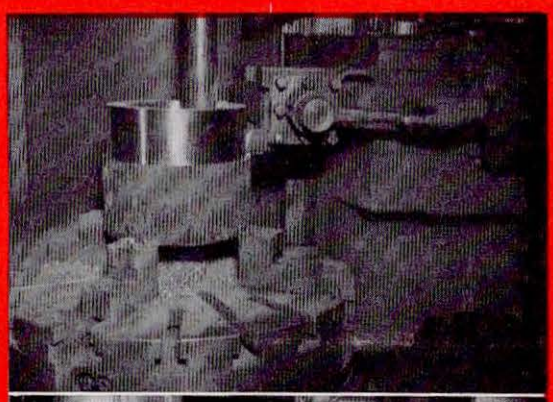
Over 100 railroads use Barco for spot or gang tamping—because Barco does more and better work in *less* time, and at less cost. Light in weight and perfectly balanced, Barco is self-contained, portable, eliminates need to remove ballast from between the ties. When the ballast is fouled or "cemented" the power developed by the BARCO tytamper is sufficient to break up the "cemented" ballast during the tamping operation. No digging out or loosening up the ballast before tamping when BARCO tytampers are used, as would be necessary with other tampers with less power. Write Barco Manufacturing Co., 1800G Winnemac Avenue, Chicago 40, Illinois. In Canada: The Holden Co., Ltd., Montreal, Canada.

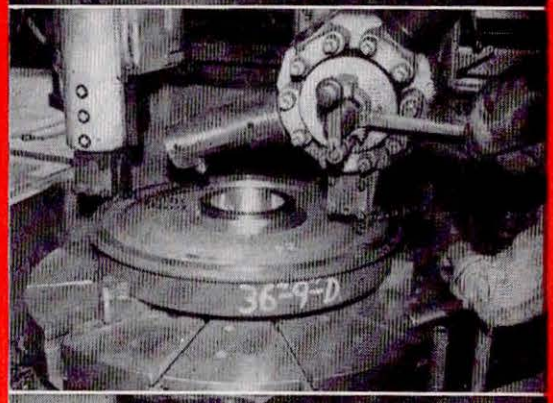
BARCO

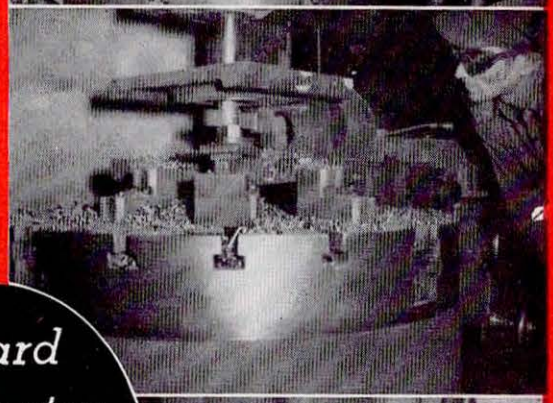
UNIT TYTAMPERS

FREE ENTERPRISE • THE CORNERSTONE OF AMERICAN PROSPERITY

Always Ready to Tackle a Variety of JOBS





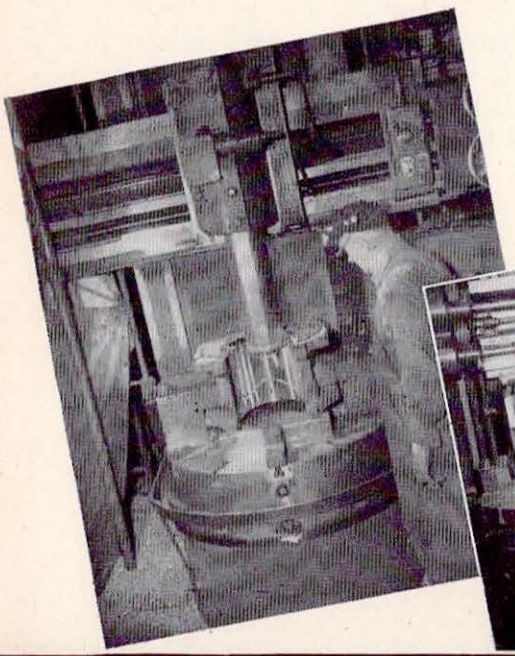


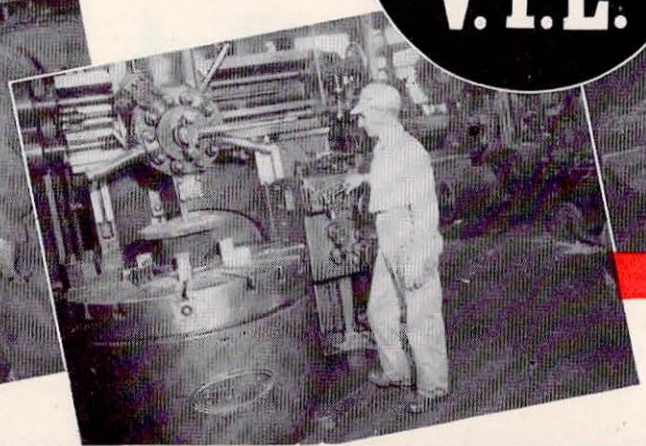
THERE'S never a dull moment around a Bullard Cut Master. Go into any railroad shop and you will find the Bullard busy cutting costs on a wide range of work. In fact the Cut Master is noted for its handling of 75 per cent of railroad boring and turning jobs in 50 per cent less time.

Illustrations show how railroads are using Bullards for cutting unit costs on bushings, wheels, crossheads, valve bushings and driving boxes.

The Bullard Cut Master stands out wherever it is operating. You get simultaneous cutting operations on two or three heads according to machine size, pendant control, limit stops, wide range of speeds and feeds and hydraulically-operated clutch and brake. These and other features make a Bullard Cut Master a money-saving production unit in any shop on any job.

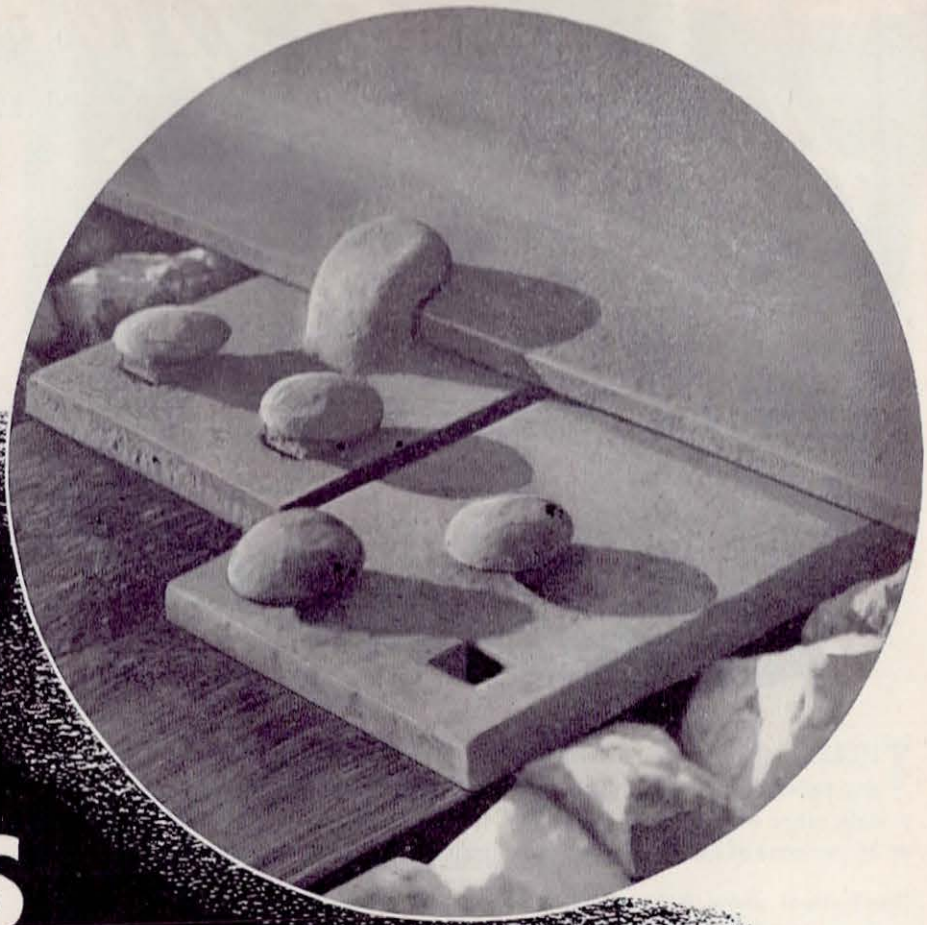
Bullard Cut Master V.T.L.





THE BULLARD COMPANY BRIDGEPORT 2, CONNECTICUT

A "low" hook fits rail-bound frogs; a "high" hook the cast type. High hooks can quickly and easily be hammered down to fit low-flange frogs.



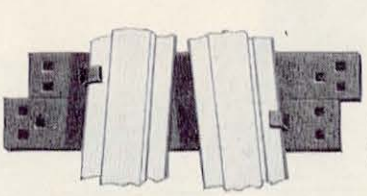
Where TWO PLATES *are better than one*

Bethlehem's Twin Hook Frog Plates are used in pairs, never as single units. The reason is that each plate is equipped with a big, strong, forged hook and any mating pair can be used at several *different* tie positions. Thus you don't have to stock a large and confusing variety of special plates, one for every position.

But there are other advantages, too. The integral forged hooks are larger and stronger than ordinary spike heads. They lessen pull on the spikes themselves; help prevent tie destruction. Moreover, they'll stand a vicious lateral thrust, and they hold hard against lifting.

Another thing you'll like is the way the twin plates fit ties. They do not protrude over the edges of standard ties; hence there is nothing to hinder the smooth, even tamping of ballast.

Twin Hook Frog Plates are an old, established accessory, used in quantity by some of the country's greatest railroads. If you haven't investigated their possibilities, ask a Bethlehem man to tell you about them. He'll be glad to give you the full story.



Standard Twin Hook Plates are made in 23-, 27-, and 31-in. lengths.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast
Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation

Export Distributor:
Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM TWIN HOOK FROG PLATES

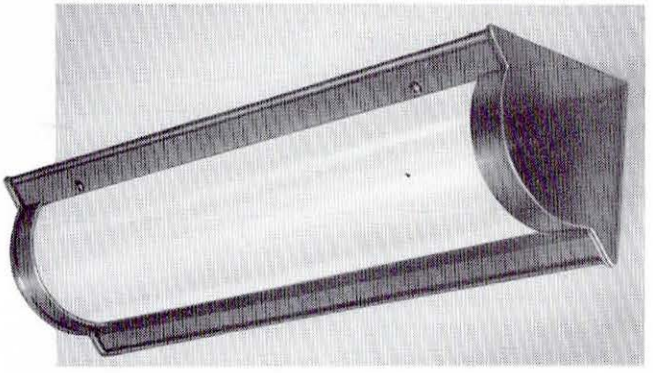
FLUORESCENT LIGHTING with GLASS or PLASTIC Shades by SAFETY COMPANY

This diner-lounge car has Slimline fluorescent ceiling fixture, shown in close-up at right. The fixture, used with glass or plastic shade, is recommended for bedrooms, compartments, and drawing rooms, and for general lighting in lounges, diners, chair cars and coaches. Slimline lamps have desirable features not available in standard fluorescent lamps. Choice of eight output values.

Fluorescent lighting fixtures by Safety Company are available in a wide range of styles, in practical and modern types, with either glass or plastic shades.

Safety Company car lighting fixtures are designed for the specific requirements of railway operation. Each type is optically correct and sound in mechanical and electrical construction to withstand the severe conditions encountered in railroad service.

Advantages of this equipment include efficiency in light output, refinement in design, ease of application, minimum penetration or projection, and simplified maintenance.



Illustrated above is fluorescent cove light, designed to fit neatly into corner of ceiling and sidewall.

Whether your car lighting problems are solved through the variety of Safety Company standard lighting fixtures, or by the adaptation of these designs to individual requirements, you benefit from the specialized experience of our lighting engineers and designers.

Descriptive data sent promptly on request.

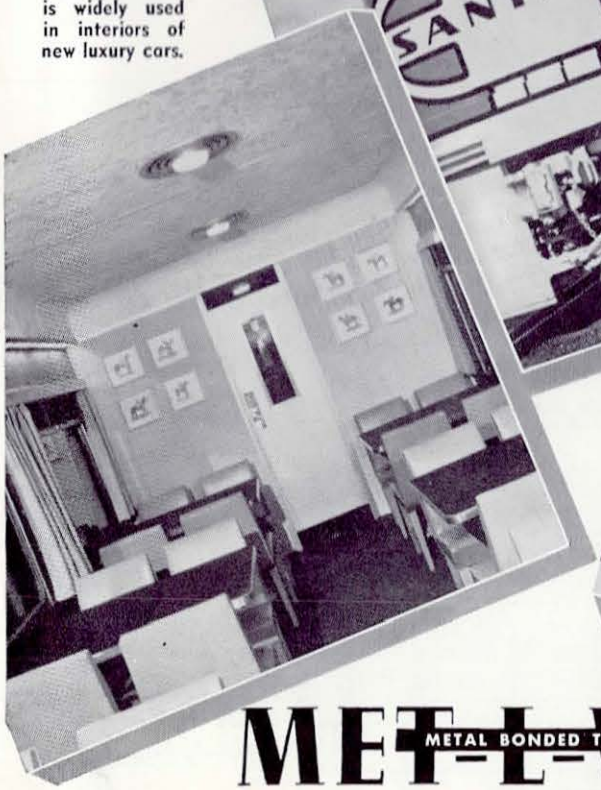
THE SAFETY CAR HEATING AND LIGHTING COMPANY INC

NEW YORK CHICAGO PHILADELPHIA ST. LOUIS SAN FRANCISCO NEW HAVEN MONTREAL

SAFETY COMPANY PRODUCTS INCLUDE: Complete Air-Conditioning Equipment • Fans • Genemotors • Generators Motor Alternators • Regulators • Lighting Fixtures • Switchboards • Parcel Racks • Generator Drives.

Leading Diesel builders have adopted MET-L-WOOD as standard for exterior sheathing and doors.

MET-L-WOOD is widely used in interiors of new luxury cars.



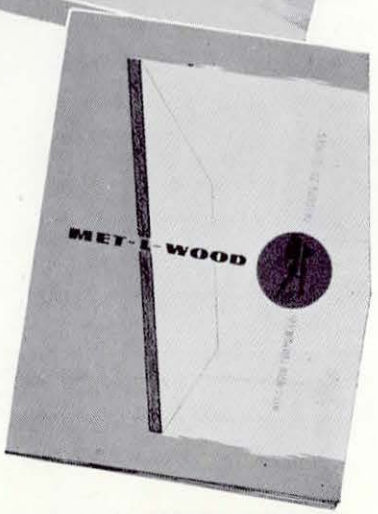
MET-L-WOOD provides practical functional beauty for both interior and exterior structure and decoration of city ticket offices.

MET-L-WOOD

METAL BONDED TO PLYWOOD

the versatile material for railroad service

EXTERIOR sheathing and doors for Diesels, interior panels, bulkheads, heading, wainscoting, doors, luggage shelves, cabinets, table tops in the newest luxury passenger cars, all demonstrate the versatile superiority of this outstanding material,—MET-L-WOOD.

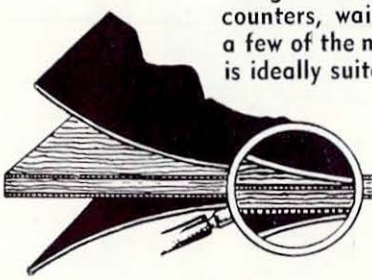


Metal surface one or both sides . . . two or more metals in special surface treatments to order . . . thicknesses from ¼" to 1" . . . stock sizes and units, or prefabricated to your specifications . . . deadens sound . . . damps vibration . . . resists fire

Architects and Engineers: MET-L-WOOD can be used advantageously for modernizing existing station facilities. Office partitions, service counters, wainscoting, and cashiers booths are a few of the many uses for which MET-L-WOOD is ideally suited.

The story of MET-L-WOOD is told in a 12-page brochure. A copy will be sent at your request.

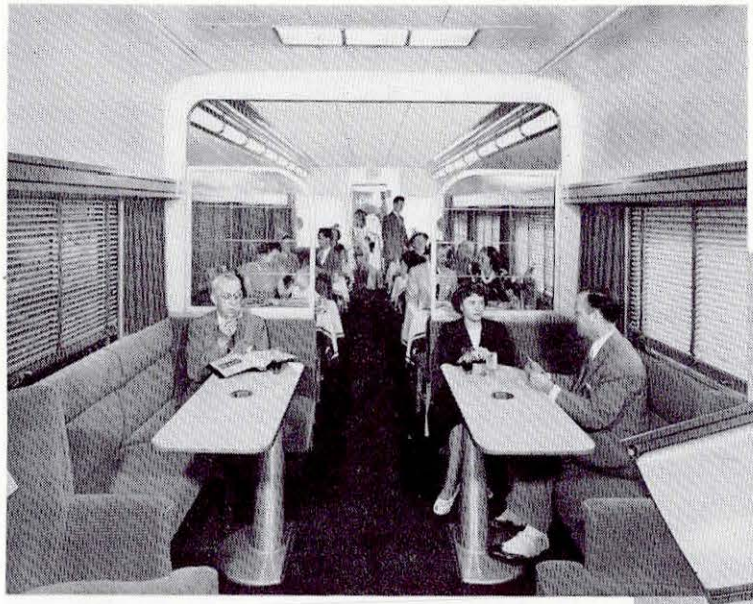
Our engineering staff will gladly help you design and produce better and less costly products with MET-L-WOOD.

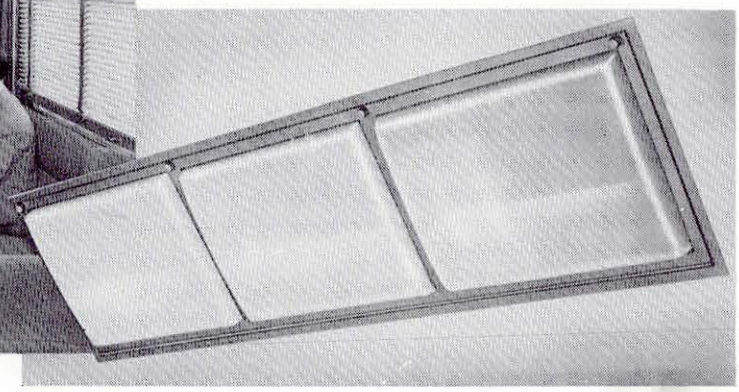


MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois

FLUORESCENT LIGHTING with GLASS or PLASTIC Shades by SAFETY COMPANY



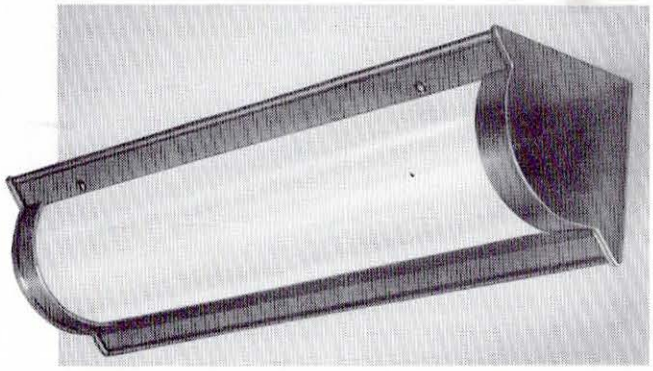


This diner-lounge car has Slimline fluorescent ceiling fixture, shown in close-up at right. The fixture, used with glass or plastic shade, is recommended for bedrooms, compartments, and drawing rooms, and for general lighting in lounges, diners, chair cars and coaches. Slimline lamps have desirable features not available in standard fluorescent lamps. Choice of eight output values.

Fluorescent lighting fixtures by Safety Company are available in a wide range of styles, in practical and modern types, with either glass or plastic shades.

Safety Company car lighting fixtures are designed for the specific requirements of railway operation. Each type is optically correct and sound in mechanical and electrical construction to withstand the severe conditions encountered in railroad service.

Advantages of this equipment include efficiency in light output, refinement in design, ease of application, minimum penetration or projection, and simplified maintenance.



Illustrated above is fluorescent cove light, designed to fit neatly into corner of ceiling and sidewall.

Whether your car lighting problems are solved through the variety of Safety Company standard lighting fixtures, or by the adaptation of these designs to individual requirements, you benefit from the specialized experience of our lighting engineers and designers.

Descriptive data sent promptly on request.

THE SAFETY CAR HEATING AND LIGHTING COMPANY INC

NEW YORK CHICAGO PHILADELPHIA ST. LOUIS SAN FRANCISCO NEW HAVEN MONTREAL

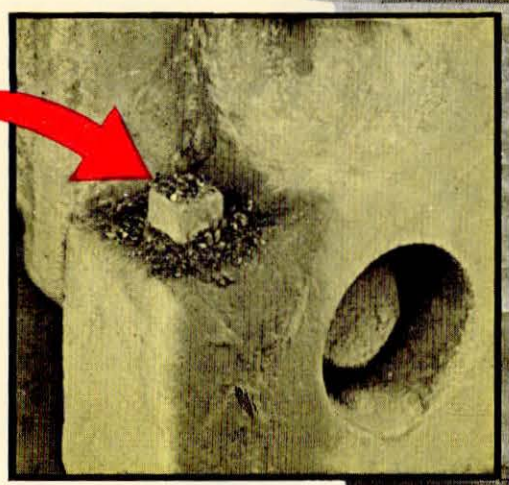
SAFETY COMPANY PRODUCTS INCLUDE: Complete Air-Conditioning Equipment • Fans • Genemotors • Generators Motor Alternators • Regulators • Lighting Fixtures • Switchboards • Parcel Racks • Generator Drives.

"What? NO OIL?"

With oil Lubrication,

DIRT

quickly accumulates around oil *plugs and can very easily be introduced into the bearing unless extraordinary care is used at time of oiling.*



GREASE LUBRICATION IS CLEANER, SAFER AND GIVES GREATER PROTECTION. LONGER LASTING, IT IS MORE ECONOMICAL, GREATLY REDUCING MAINTENANCE EXPENSE.

YEARS ahead in lubrication principles, Fafnir-Waugh Twin Bearings pioneered and proved grease lubrication for anti-friction railway Journal Bearings. Grease lubricated*, Fafnir's are the *first* Journal Bearings *designed especially for grease lubrication.* Twin Bearing's grease lubrication means less frequent lubrication, safer, cleaner, more efficient lubrication, far lower-cost lubrication.

But most important, it is *safe* lubrication, lasting generally from wheel-turning to wheel-turning without addition or change. This means far less danger from hot boxes due to negligence, far lower cost for lubricants and labor.

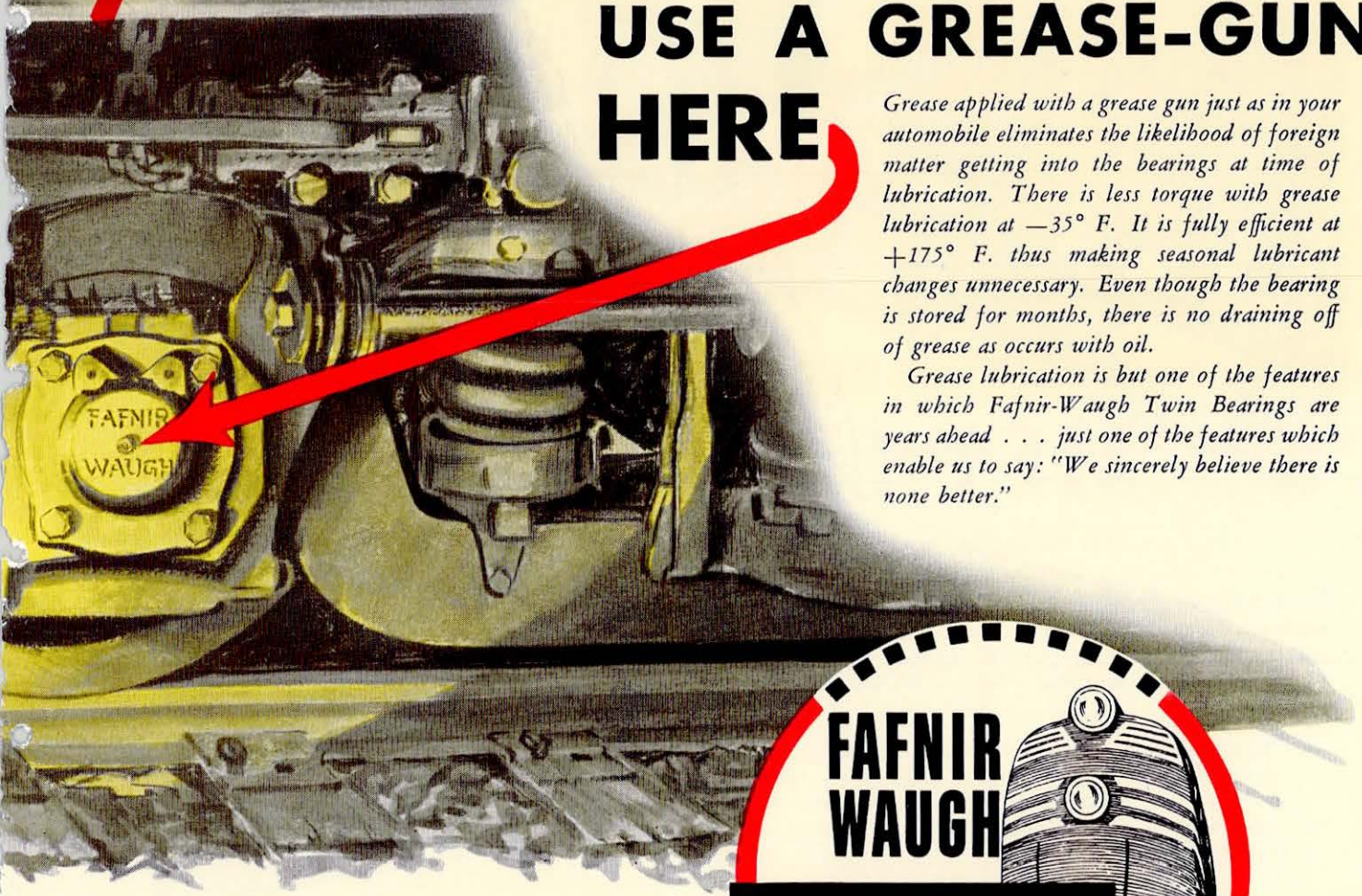
* Oil lubricated bearings also available.

Leaders and pioneers of grease lubrication for railway journals

That's right!

Edward M. Stevens

USE A GREASE-GUN HERE



Grease applied with a grease gun just as in your automobile eliminates the likelihood of foreign matter getting into the bearings at time of lubrication. There is less torque with grease lubrication at —35° F. It is fully efficient at +175° F. thus making seasonal lubricant changes unnecessary. Even though the bearing is stored for months, there is no draining off of grease as occurs with oil.

Grease lubrication is but one of the features in which Fafnir-Waugh Twin Bearings are years ahead . . . just one of the features which enable us to say: "We sincerely believe there is none better."

FAFNIR
WAUGH
TWIN BEARINGS

FOR RAILWAY JOURNALS

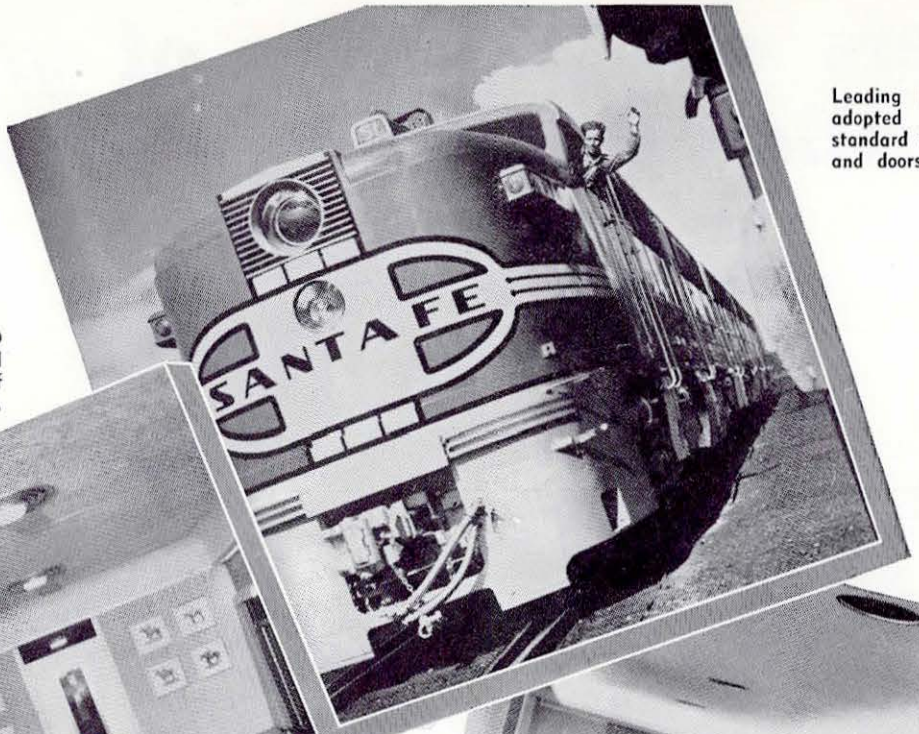
Specify Fafnir-Waugh Twin Bearings on your next car, locomotive-tender or diesel orders.

FAFNIR-WAUGH BEARINGS DIVISION

WAUGH EQUIPMENT CO.

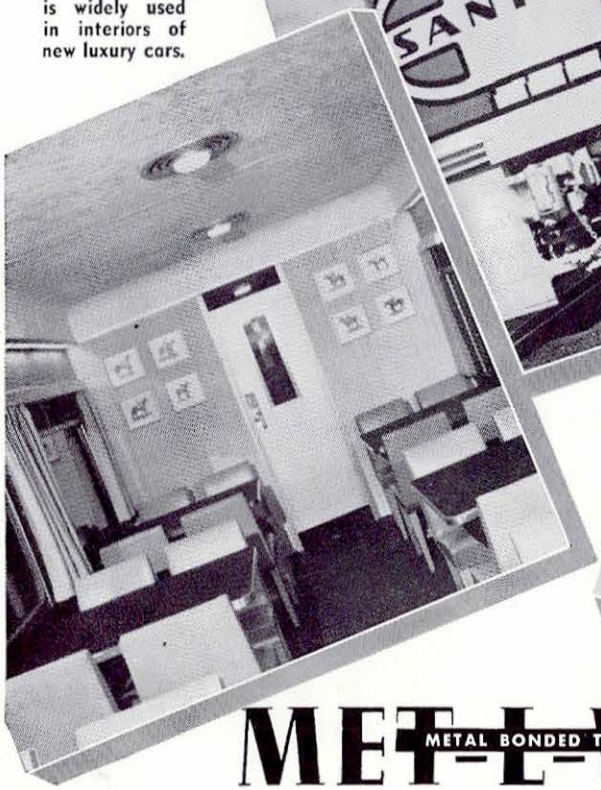
NEW YORK • CHICAGO • ST. LOUIS • SAN FRANCISCO

"None better... simplicity itself"



Leading Diesel builders have adopted MET-L-WOOD as standard for exterior sheathing and doors.

MET-L-WOOD is widely used in interiors of new luxury cars.



MET-L-WOOD provides practical functional beauty for both interior and exterior structure and decoration of city ticket offices.

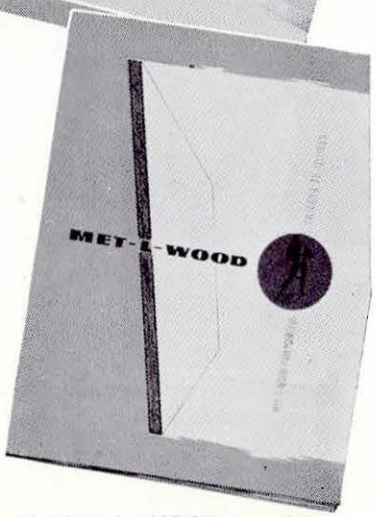
MET-L-WOOD

METAL BONDED TO PLYWOOD

the versatile material for railroad service

EXTERIOR sheathing and doors for Diesels, interior panels, bulkheads, heading, wainscoting, doors, luggage shelves, cabinets, table tops in the newest luxury passenger cars, all demonstrate the versatile superiority of this outstanding material,—MET-L-WOOD.

Metal surface one or both sides . . . two or more metals in special surface treatments to order . . . thicknesses from 1/4" to 1" . . . stock sizes and units, or prefabricated to your specifications . . . deadens sound . . . damps vibration . . . resists fire



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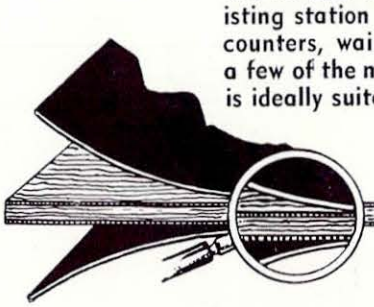


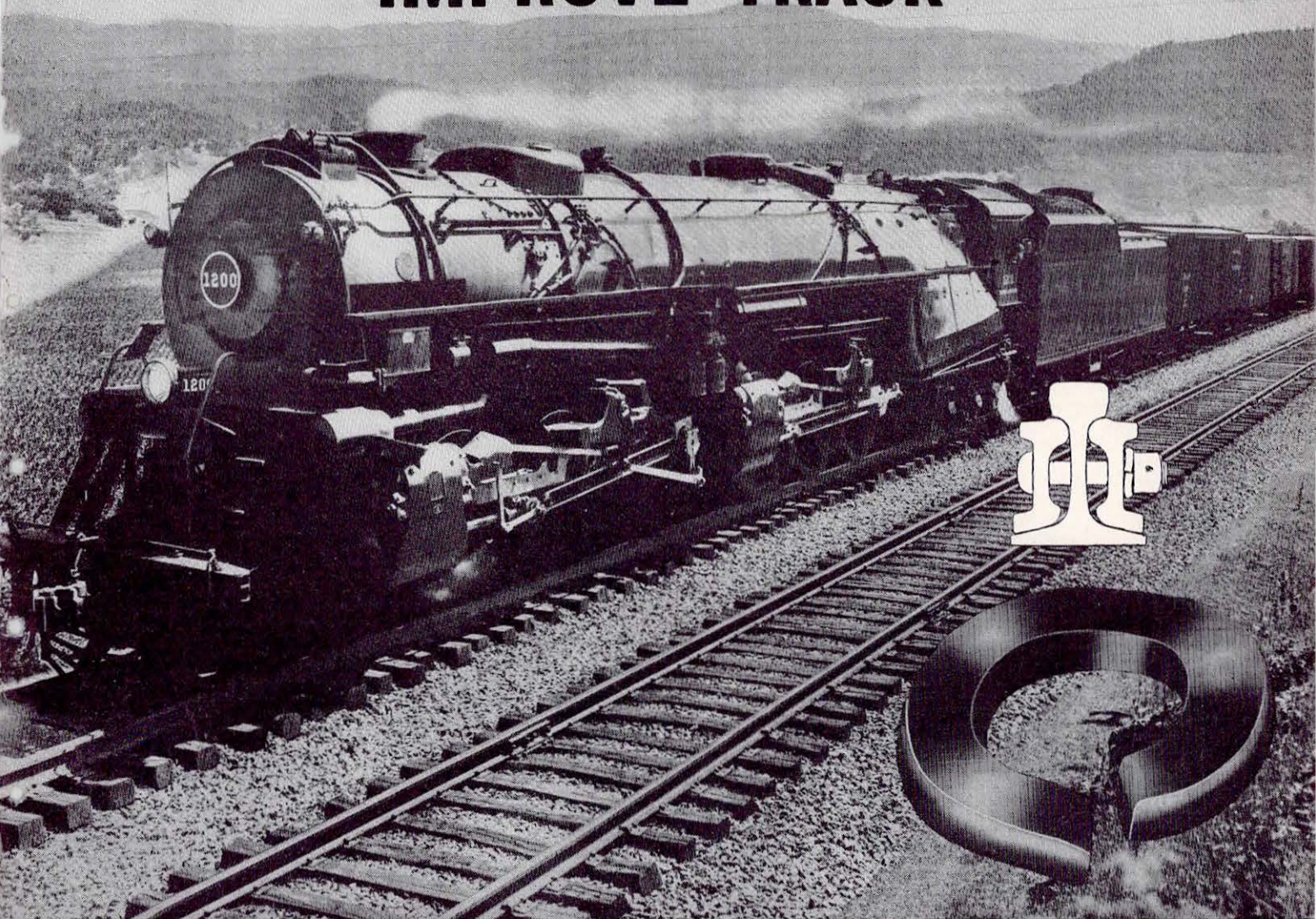
MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois

Here's another example of a finely maintained roadbed.

Improved Hipowers with their tremendous reserve spring power are used on thousands and thousands of miles of America's roadbeds—admittedly the best in the world—because they hold bolts tight longer by equalizing tensions, by absorbing shocks, and by protecting rail ends and joint bars. Yes—

IMPROVED HIPOWERS
IMPROVE TRACK



THE NATIONAL LOCK WASHER COMPANY, NEWARK 5, N. J., U. S. A.

A COMPLETE LINE OF RAILWAY SPRING WASHERS

NOW...with interchangeable

EXIDE-IRONCLAD BATTERIES

you can STANDARDIZE

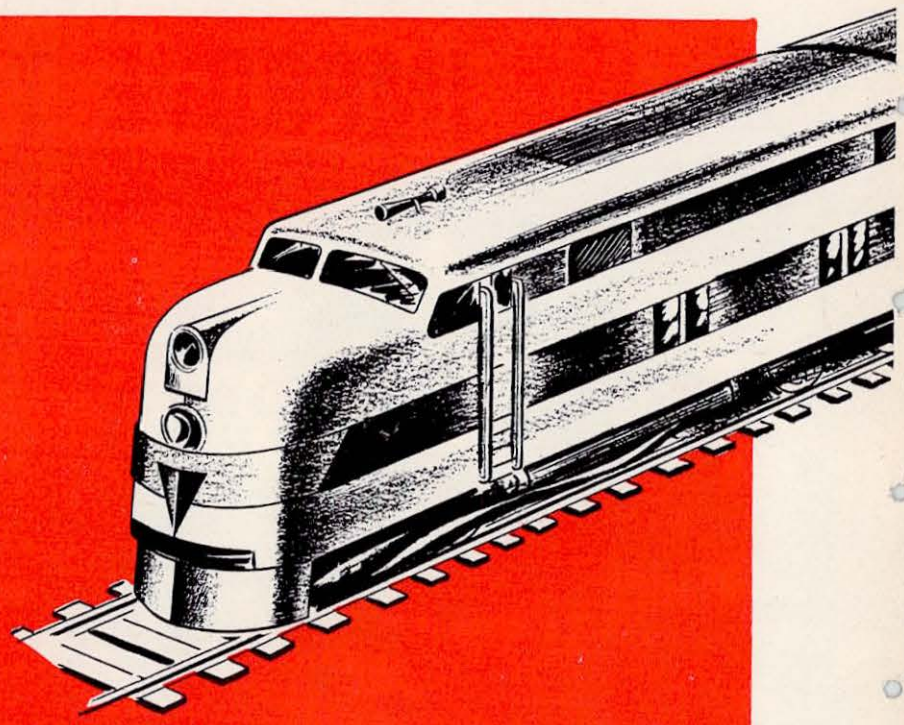
Benefit from the economies and other advantages that battery standardization brings. The Exide-Ironclad, in new molded container assembly, provides a universal, interchangeable battery for cranking Diesel-electric locomotives of practically every size.

MV-17-D

Exide-Ironclad Battery—284 ampere hours—extensively used for cranking switching locomotives of 600 H.P. and larger.

MV-25-D

Exide-Ironclad Battery—426 ampere hours—extensively used for cranking road locomotives of the larger sizes.



When it's an EXIDE-IRONCLAD your Diesels START!

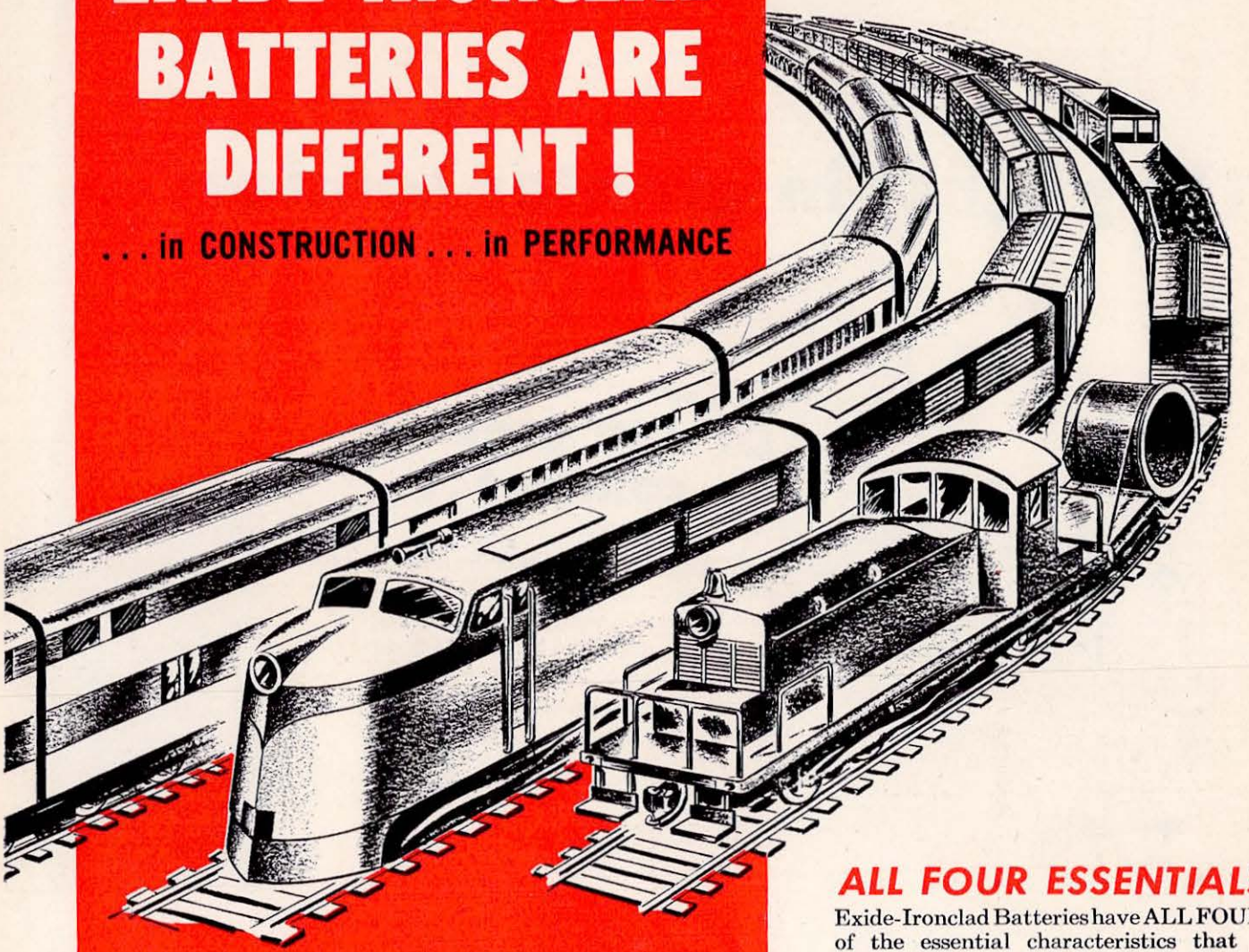
1888

DEPENDABLE BATTERIES FOR 61 YEARS

1949

EXIDE-IRONCLAD BATTERIES ARE DIFFERENT!

. . . in CONSTRUCTION . . . in PERFORMANCE



ONE IMPORTANT DIFFERENCE IS THE UNIQUE *POSITIVE PLATE*

Enlarged cutaway view of section of tube of positive plate.

This plate consists of a series of slotted tubes containing the active material. So small are these slots that, while permitting easy access of the electrolyte, they retard the active material from readily washing out or jarring loose . . . adding considerably to life of battery. All other parts are built to match the long life of the positive plate.

ALL FOUR ESSENTIALS

Exide-Ironclad Batteries have ALL FOUR of the essential characteristics that a storage battery must have to assure maximum performance in Diesel locomotive cranking . . .

1. High power ability
2. High electrical efficiency
3. Ruggedness
4. Long life with minimum maintenance

The combination of these four Exide-Ironclad characteristics assures years of day-in, day-out service with dependability and economy.

DEPENDABLE

POWER

Exide

IRONCLAD BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 32
Exide Batteries of Canada, Limited, Toronto

"Exide-Ironclad" *Reg. Trade-mark U. S. Pat. Off.*

They SLEEP in greater comfort . . .

-EAT in greater comfort . . .

In the quiet spaciousness of the modern dining car . . . in a "climate" that pleases New Englander, Southerner, Texan and Californian alike . . . when Stonefelt, the modern car insulation is on the job to reduce external sounds . . . help keep temperatures even.

-RELAX in greater comfort . . .

While miles slip easily by. . . in quiet surroundings made to order for relaxation. Where, no matter what the weather, these attractive car interiors add to the pleasure of travelling . . . because noise merely whispers, and temperatures always remain mild-mannered . . . in cars lined with Stonefelt.

Johns-Manville 91 YEARS OF

there's GREATER COMFORT all the way in cars insulated with Stonefelt

TODAY PASSENGERS SLEEP WELL . . . ride well . . . *live well* aboard our modern trains —because everything has been taken into consideration for their comfort.

Stonefelt is a typical example of the thorough way in which passenger comfort is considered.

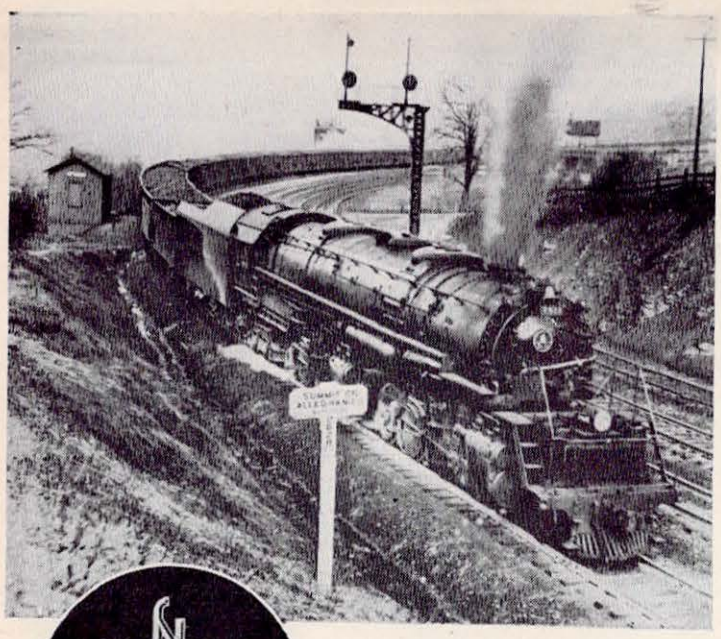
Passengers never see it . . . may never know it's there. Yet there it is . . . a product specifically designed for passenger car service . . . light, fluffy blankets of it in between the car walls . . . keeping passengers comfortable—just as effectively as the soft-mattressed beds, or the adjustable chairs.

Stonefelt, in the car walls, *adds* to passenger comfort, in winter or summer—because it muffles sound and resists heat transmission . . . and thereby helps reduce the cost of operating air-conditioning systems in cars.

There are a number of other important advantages that you should know about Stonefelt. We will be glad to send you full details on request. Just address Johns-Manville at Box 290, New York 16, New York.

JOHNS-MANVILLE JM PRODUCTS

SERVICE TO TRANSPORTATION



Time and Tonnage

NY "AB" BRAKE

Are the two fundamental constituents which make Railway transportation tick.

The "AB" Brake is the one element of equipment which acts directly on making it possible to reduce time and increase tonnage.

The New York Air Brake Company

420 Lexington Ave., New York 17, N.Y. Plant: Watertown, N.Y.

LESS WEAR AND TARE BECAUSE WE PROTECT THE THROAT with

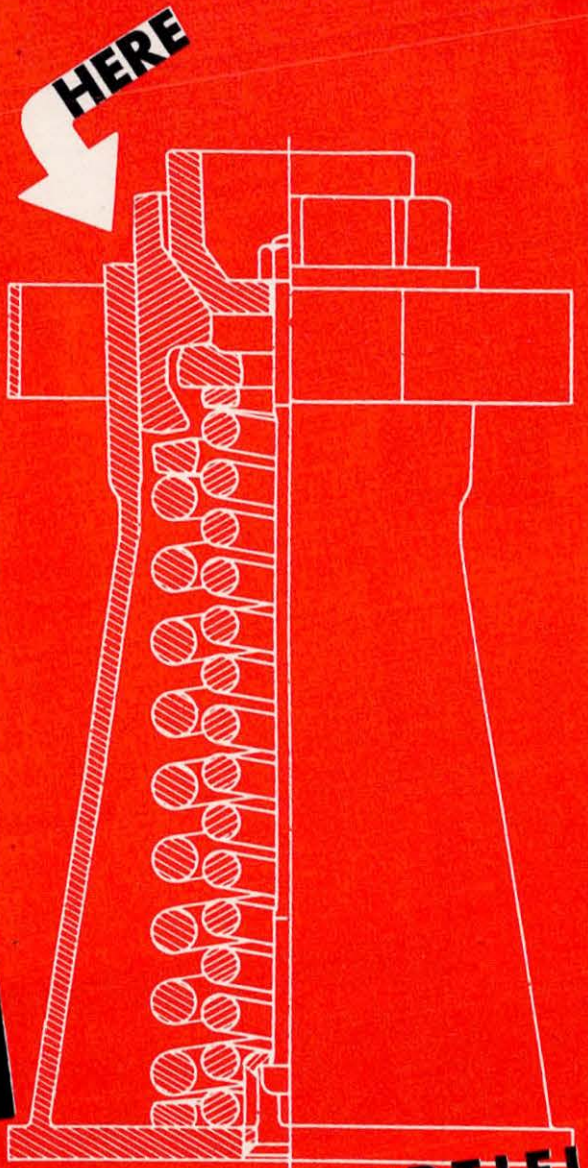
MANUFACTURED FROM USS ABRASION RESISTING STEEL UNITED STATES STEEL

THE THROAT of the housing is where draft gears wear first and fastest, where there is critical need for extra protection. On Hulson gears, the throat *is* protected. It's built, as is the entire housing, of United States Steel Corporation Abrasion Resisting Steel . . . a special formula steel which reduces wear and *tare*. Weighing only 202 lbs., the Hulson 202 is many pounds lighter than the next lightest gear.

HULSON CO., CHICAGO, ILL.

HULSON 202 DRAFT GEAR

SAFEGUARDS AGAINST WEAR



A·A·R CERTIFIED

They ride along in Safety...

ON CF&I RAILS

YES they ride in safety on CF&I rails...*quality* rails and accessories...made with a know-how gained from 67 years' experience in developing processes and controls which assure a *quality* product.

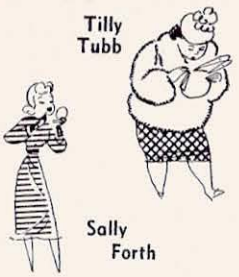
Every step in production, from the raw materials to the finished rail, is an integral part of CF&I's operation, providing rigid *quality* control otherwise impossible.

CF&I

The Colorado Fuel and Iron Corporation

GENERAL OFFICES: DENVER, COLORADO

You Can't Specify Your Passengers' Dimensions



THAT'S WHY SO MANY RAILROADS SPECIFY KARPEN COMFORT-DIMENSION SEATING

It's hard to standardize on a certain size passenger . . . but it's easy enough to standardize on Karpen seating—seating that has been *engineered* for every *body's* comfort. Karpen engineers' years of practical experience in fitting seats and backs to body contour enabled them to design seating that gives the maximum amount of real, relaxing comfort to the maximum number of people. Karpen studies *people* because people are the final ingredient in making a Karpen seat a revenue producer . . . And that's the end result we're all after, isn't it?

S. KARPEN & BROS. TRANSPORTATION SEATING

624 S. MICHIGAN AVE., CHICAGO • ONE PARK AVE., NEW YORK

George B. Cross Company

EXCLUSIVE SALES AGENTS

KARPEN SEATING . . . POINT OF CONTACT BETWEEN THE RAILROAD AND ITS PASSENGERS

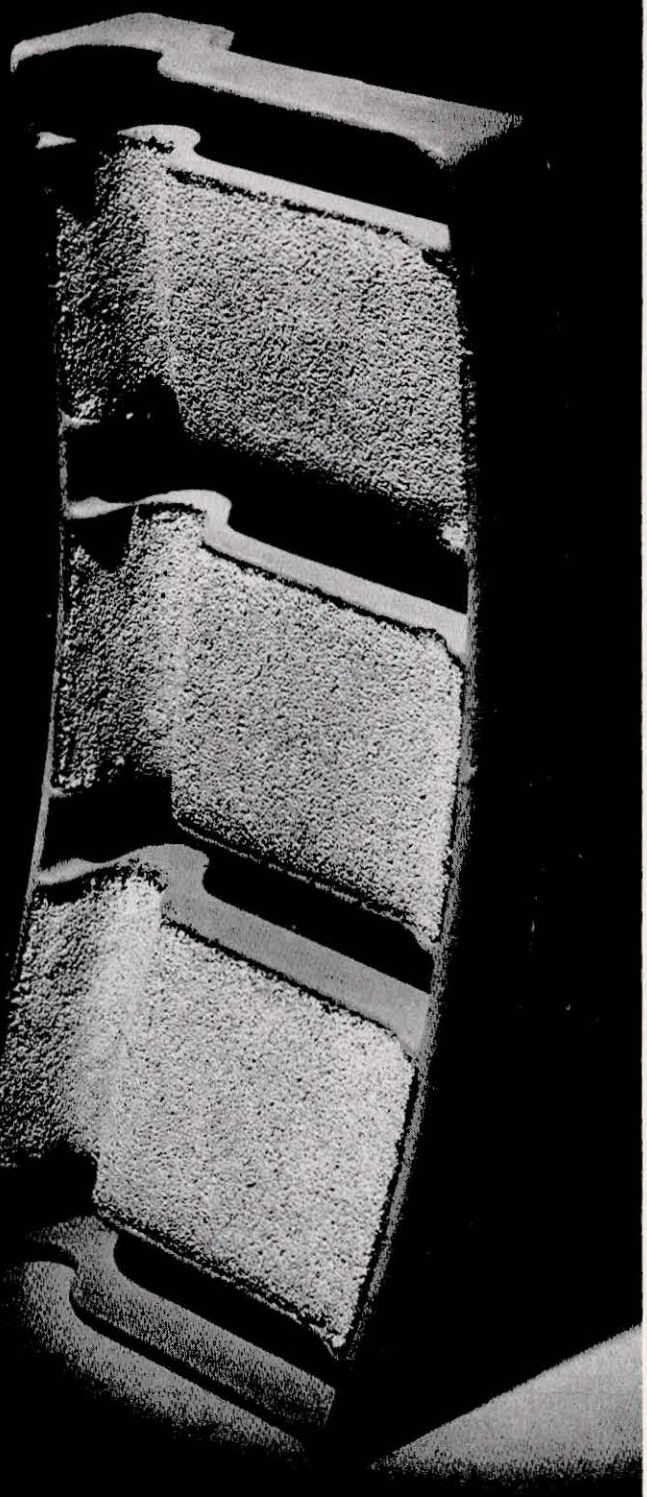
FOR DIESEL EQUIPMENT

FOR FIFTY YEARS . . . solving wheel problems has been our business. Our Bulletin 501 contains our latest technical data. A copy is yours for the asking.

Write, phone or wire

WHEEL TRUING BRAKE SHOE* CO.

628 W. Baltimore, Detroit 2, Mich.



Series 48-5

*Reg. U. S. Patent Office
Copyright 1947

Now! Standardized headlighting for all types of road and switch engines

New G-E "All-glass" sealed-beam-type headlamps offer 6 big advantages for all types of locomotives

The new General Electric headlamps designed for use in pairs are revolutionizing locomotive headlighting! They can be easily applied to steam and Diesel-electric locomotives, road or switch engines for standardized headlighting.

And with the two 7″ diameter lamps replacing the single bulb and 14″ reflector, you get these other outstanding advantages: (1) greater pick-up distance, (2) standby lighting for emergency, (3) no breakage due to weather, (4) reduced maintenance, (5) no more focusing, (6) reflectors that stay bright.

New developments like this are a result of General Electric's constant research to give you more and better light for your money. It pays to see G.E. first for any lighting need.

(Above) G-E headlamps on the new gas-turbine-electric locomotive.
(Right) Installation on steam locomotive.

You can put your confidence in—

GENERAL ELECTRIC

More and More Steel—Better and Better Cars

NAILABLE STEEL FLOORING

Marks Another Great Advance In Boxcar Development

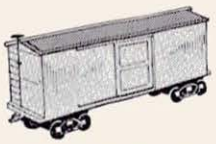
Step by step, unit by unit, steel won its way in boxcar construction until it had supplanted less durable materials in all main units but one. The floor—because blocked loads must be held by nailing—remained unchanged. . . . Then came NAILABLE STEEL FLOORING—combining superior strength and easy nailability—and now the boxcar, in all parts subjected to stress and hard use, is truly a *steel* car.

Just as each added use of steel—in underframes, ends, body framing, sheathing and roofs—lowered costs of operation and maintenance, so does its newest use in NAILABLE STEEL FLOORING. You can't beat steel for resistance to stress and wear—you can't equal NAILABLE STEEL FLOORING for durability, freedom from breakthroughs, and maximum protection for either blocked or loose freight.

PATENTS PENDING

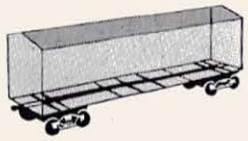
Evolution of the Boxcar

CHIEFLY WOOD



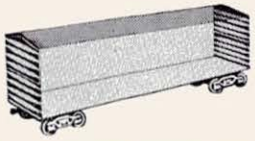
In 1880, steel was used in boxcars only in trucks, truss rods, couplings, fittings and accessories. Cars of those days needed frequent repairs, were short lived.

STEEL UNDERFRAMES



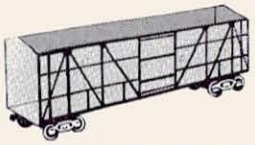
Steel became a major factor in boxcar construction when it began to be used in underframes. As a result of its greater strength, downtime for repairs and maintenance costs were substantially reduced.

STEEL ENDS



Breakthroughs caused by the sliding of ladings upon sudden stops were common until steel ends came into use. Again, the greater strength of steel resulted in reduced costs.

STEEL BODY FRAMING

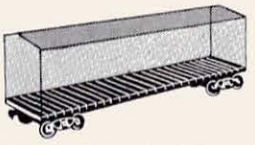


The more steel, the more strength—and body framing of steel worked a further reduction in maintenance and repair costs.

STEEL ROOFS AND SIDES

With the addition of steel side sheathing and steel roofs, the only non-steel part subject to stress and wear was the floor. Because nailability was essential, it remained unimproved.

NAILABLE STEEL FLOORING



Here is the latest important step in the gradual change to steel construction. NAILABLE STEEL FLOORING, made of corrosion-resisting NAX HIGH-TENSILE steel, has proved its excellence—by providing a superior surface for all types of boxcar freight, and by standing up under heavy freight and modern mechanical handling equipment.

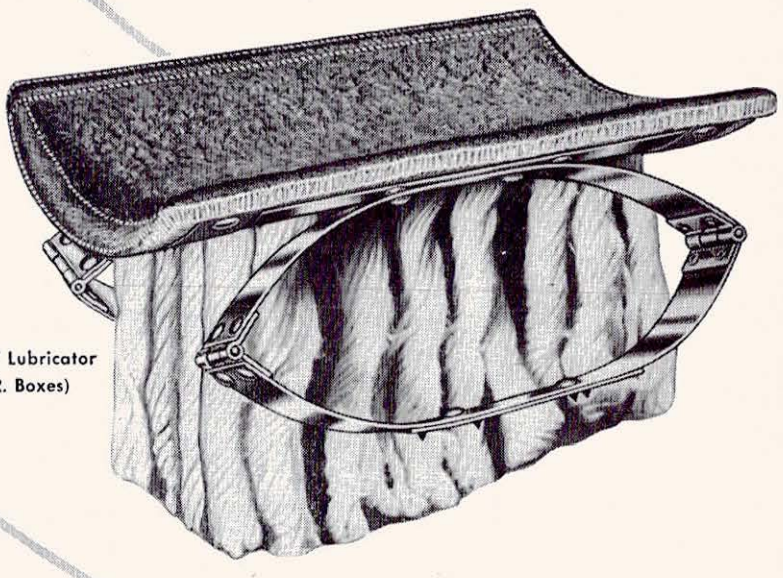
NAILABLE STEEL FLOORING

A GREAT LAKES STEEL PRODUCT

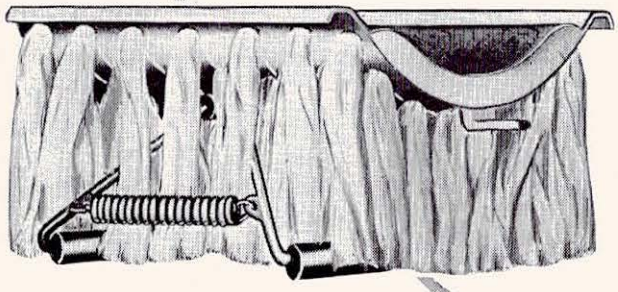
GREAT LAKES STEEL *Corporation*

Steel Floor Division • Penobscot Bldg. • Detroit 26, Mich.
UNIT OF NATIONAL STEEL CORPORATION

oil runs up hill to the MAGNUS journal lubricator pad



Magnus "RB" Lubricator
(for A.A.R. Boxes)



Magnus "FB" Lubricator
(for Locomotive Boxes)

capillary attraction causes oil to "run up hill" to the Magnus Lubricator Pad, through highly absorbent cotton wicks—which extend into the oil supply at the bottom of the Journal Box. The Lubricator Pad is kept thoroughly saturated, and contact with the journal is positively maintained by spring pressure.

Dirt and other impurities can't climb the wicking, but are constantly "shaken down" toward the bottom of the box. Only clean oil reaches the lubricating pad and the journal.

SATCO Bearing Metals

MODERN HEAVY DUTY BEARINGS

MAGNUS METAL CORPORATION
CHICAGO NEW YORK

Positive oil feed. 1

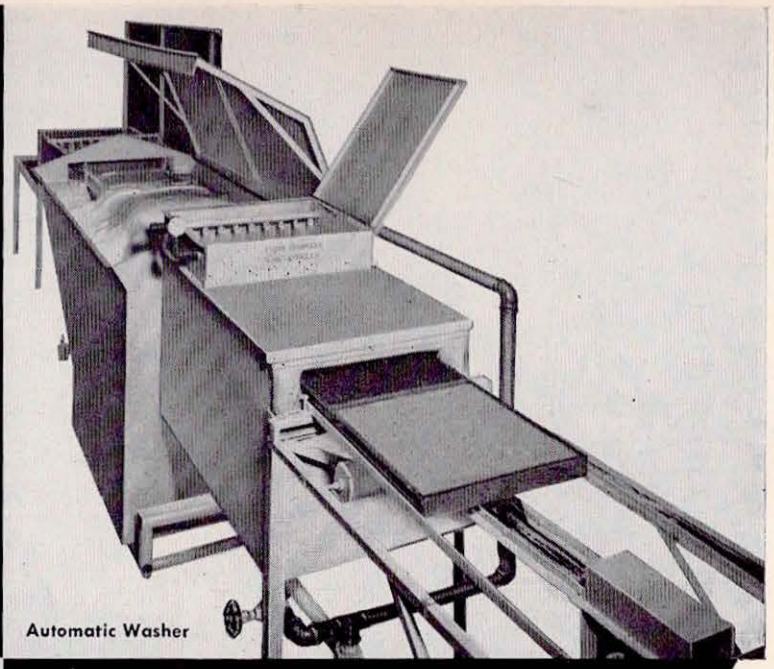
Anti-glaze oil pad. 2

3 **Ample oil supply without slopping.**

4 **No loose packing — no "waste-grabs."**

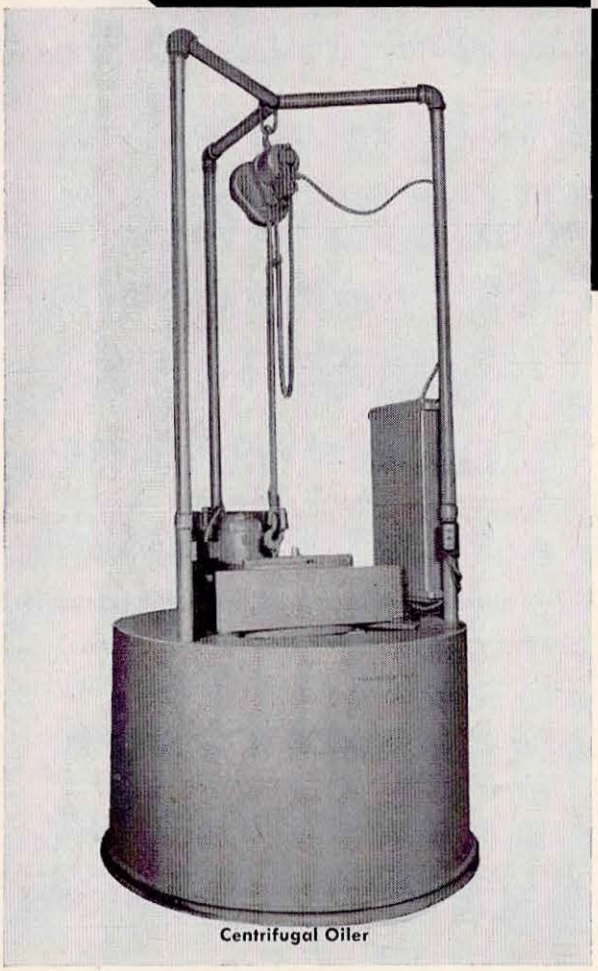
8330

REDUCE filter cleaning costs up to 67%!



Automatic Washer

with the FAR-AIR* Automatic Washer and Oiler



Centrifugal Oiler

Here is completely automatic equipment which will cut filter maintenance costs and do a *better* service job for you. The Far-Air units presently in operation for some of the major lines have proved our performance claims — filter cleaning and oiling costs reduced up to 67% when as few as 100 filters are serviced per day.

Designed to handle filters of all sizes, this filter-a-minute equipment *thoroughly* cleans and reoils filter units and permits immediate use of the filters after servicing. It adds considerably to the service life by eliminating rough handling and corrosion.

Complete information — drawings, specifications, photographs, installation, operation and maintenance instructions, comparative cost data — are available for your inspection. Investigate this equipment now.

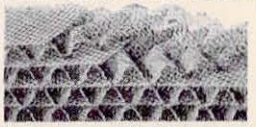
Among the users of this Far-Air equipment are:

Atchison, Topeka and Santa Fe Railway Co.
Union Pacific Railroad
New York Central System
The Pennsylvania Railroad
Chicago, Northwestern Railway Co.

*TRADE MARK REG.

herringbone-

FAR-AIR FILTERS



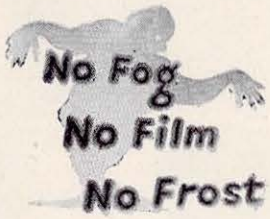
"Better by Farr"

-corrugations

FARR COMPANY *Manufacturing Engineers*

Los Angeles • Chicago • New York

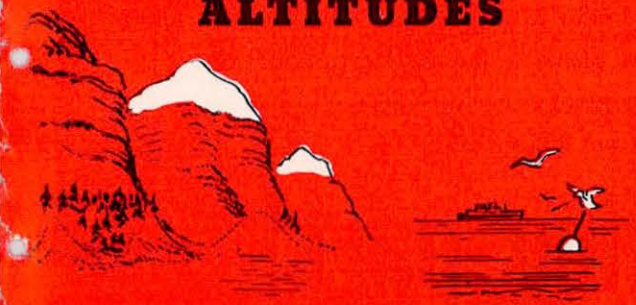
EDWARDS DOUBLE GLAZED SASH FOR CONSTANT, BRILLIANT VISIBILITY



IN ALL SEASONS

CLIMATES

ALTITUDES



In addition to new installations, it is extremely PRACTICABLE and ECONOMICAL to replace old windows with Edwards Double Glazed Units. Plan now to modernize your equipment with Edwards Sash. For complete information, write:

THE O. M. EDWARDS CO., INC.
Syracuse 4, New York

New York Office—50 Church St., N.Y.C.

In Canada:
O. M. EDWARDS CO. OF CANADA LIMITED
Offices and Plant
4000 NAMUR ST., MONTREAL 16

EDWARDS SASH
THE EYES OF TRANSPORTATION

SASH FOR EVERY TYPE OF TRANSPORTATION—ON LAND, ON THE SEAS, IN THE AIR

not 4

not 3

not 2

IMPROVED- HOLLAND Style A-7 VOLUTE SNUBBER SPRING

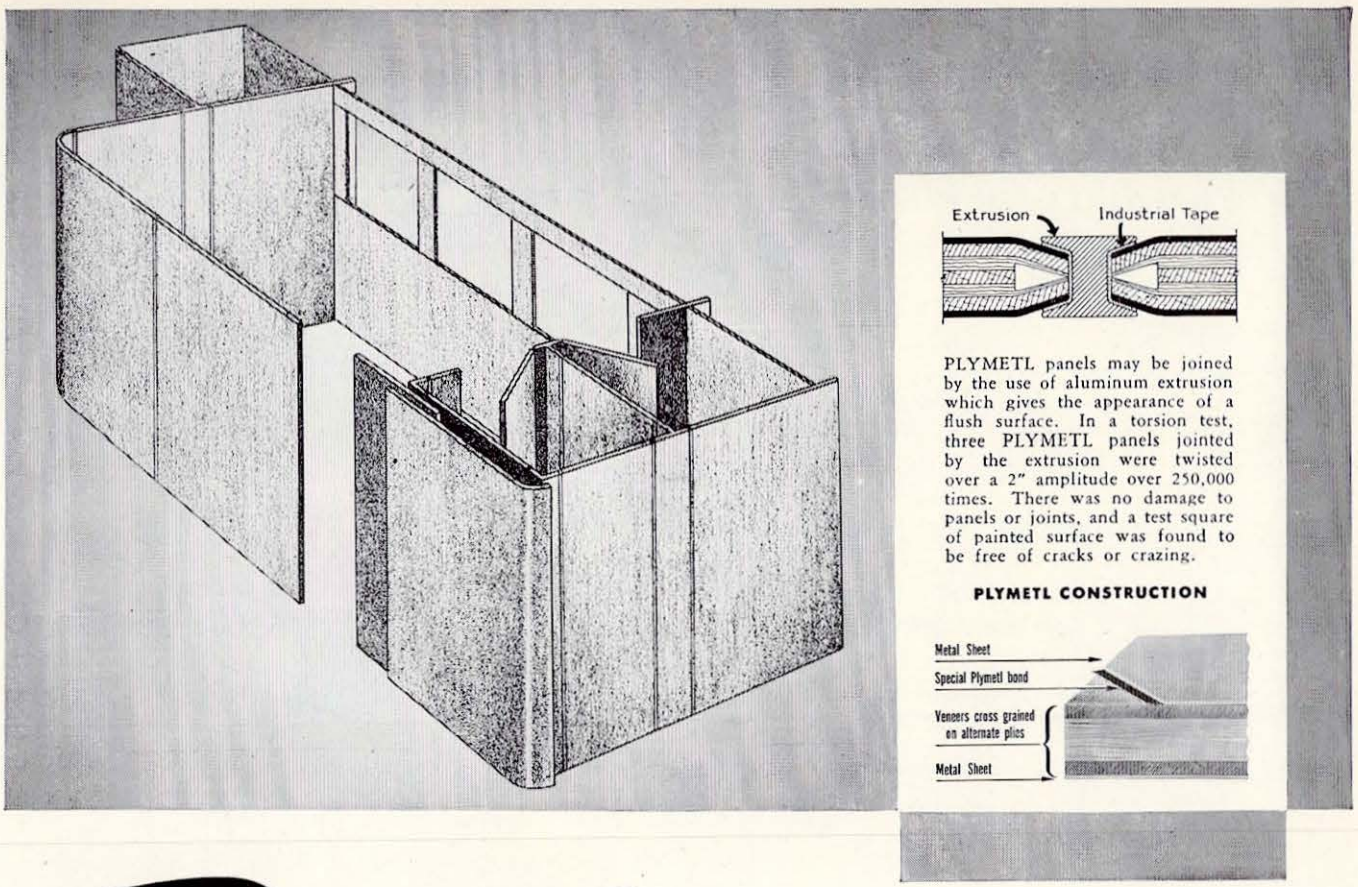
The Holland Style A-7 Volute Snubber Spring has only one moving part—the Volute Spring Coil. The scientifically proportioned friction between the flat leaves of the Volute Spring provides the proper control of spring action on both compression and recoil.

...only one moving part!

The width and thickness of the Spring Bar and the outside diameter of the Spring have been increased in the improved *Holland Style A-7 Volute Snubber Spring*—resulting in greater vertical and lateral stability, lower stresses, longer life.

HOLLAND COMPANY
332 S. MICHIGAN AVE.
CHICAGO 4, ILLINOIS

3043



PLYMETL panels may be joined by the use of aluminum extrusion which gives the appearance of a flush surface. In a torsion test, three PLYMETL panels jointed by the extrusion were twisted over a 2" amplitude over 250,000 times. There was no damage to panels or joints, and a test square of painted surface was found to be free of cracks or crazing.

PLYMETL CONSTRUCTION

Plymetl PERMITS FASTER, EASIER FABRICATION

OF ATTRACTIVE, DURABLE COMPARTMENTS AND PARTITIONS

Use Plymetl . . . the structural material to sharply reduce car construction time and labor costs. Large, flat Plymetl panels are easily handled and installed with fewer framing members. Plymetl can be fabricated right at the bench with ordinary tools . . . does not require special machinery or equipment. It may be sawed, bored or routed, and may be fastened with screws, nails, rivets, by welding, or by other conventional methods, as well as with Haskelite's special panel joint.

In addition, Plymetl gives you these other advantages. It provides attractive, smooth-lined interiors. It can cut thousands of pounds from overall car weight. Plymetl is actually as much as 100 times stiffer than sheet steel of comparable weight per square foot, assuring excellent performance in panel installation. It is sound deadening and vibration resistant. Edges of Plymetl panels can be solder sealed to prevent entrance of moisture where this is desired. This positively assures dimensional stability under excessive moisture conditions. For building new cars or remodeling old . . . save money . . . add beauty . . . with Haskelite Plymetl.

GET THESE TWO DESIGNING HELPS FREE!

Slide rule scale compares weight-stiffness factors of steel, aluminum and Plymetl. Free to designers while supply lasts.

Newest bulletin gives complete technical information on Plymetl.

structural materials for men who build better

HASKELITE

HASKELITE MANUFACTURING CORP.

Dept. RR Grand Rapids 2, Michigan

New York Philadelphia Detroit Chicago St. Louis

Canada: Railway and Power Engineering Corp., Ltd.

"We believe this investment

Railroading took a forward step recently when the Erie Railroad re-routed all passenger train operations into Cleveland Union Terminal behind Alco-G.E. locomotives. Robert E. Woodruff, President of the Erie, said, "Until diesel-electric locomotives were perfected, it was economically impossible for the Erie Railroad to use the Union Terminal in Cleveland. We believe the investment will increase our business."

In addition to greater convenience of the Union Terminal operation, the Alco-G.E. units have reduced running time. These locomotives have also contributed heavily to an over-all 73 per-cent reduction in the railroad's smoke sources in the city of Cleveland.

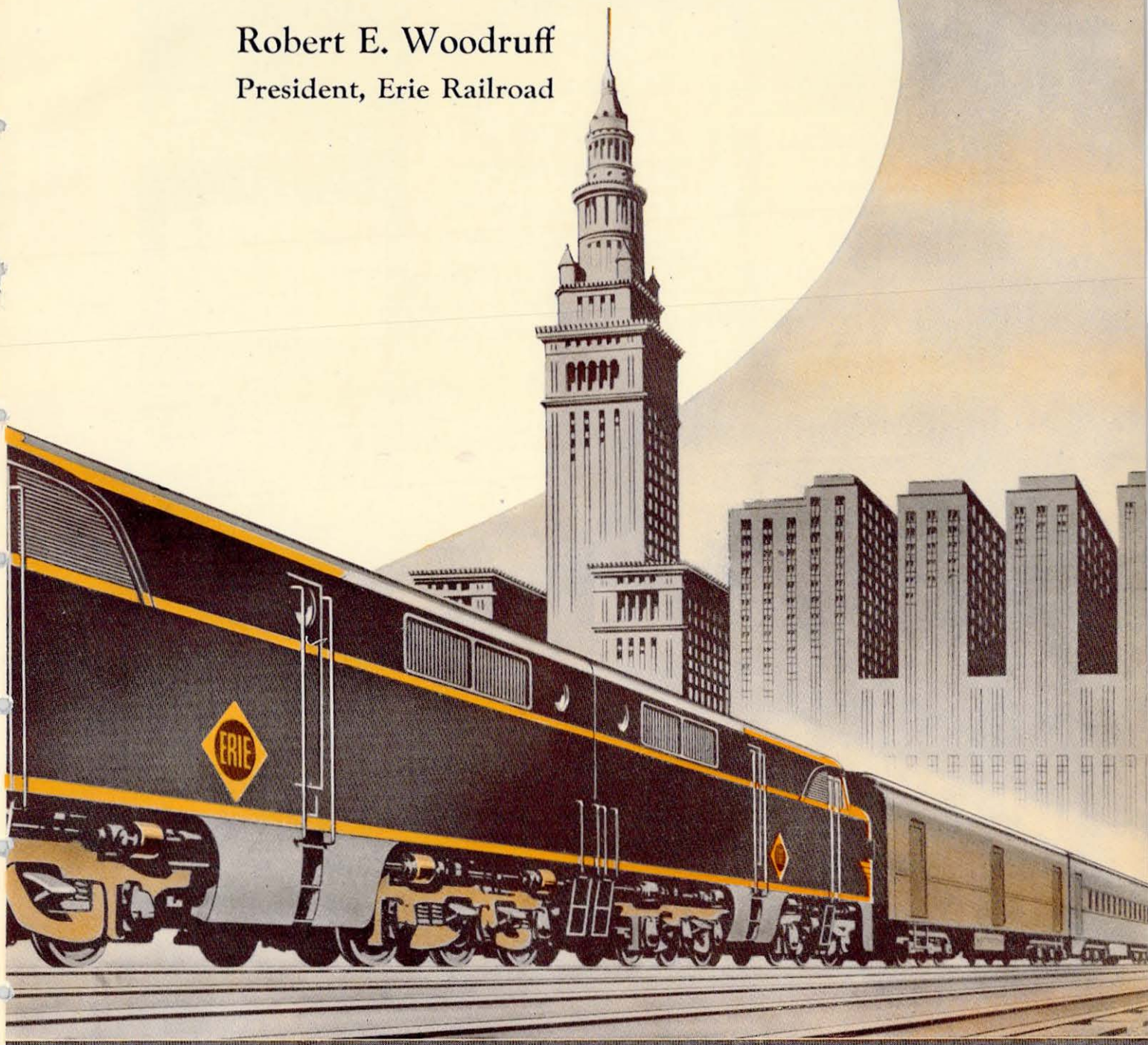
Alco-G.E. is proud of its role in this significant improvement, and of the jobs Alco-G.E. locomotives are also doing in freight and switching assignments on the Erie. Your own plans to increase business and streamline operations can be aided materially by the Alco-G.E. Survey Service. Your Alco-G.E. representative will gladly tell you how.

Alco GE

AMERICAN LOCOMOTIVE

will increase our business"

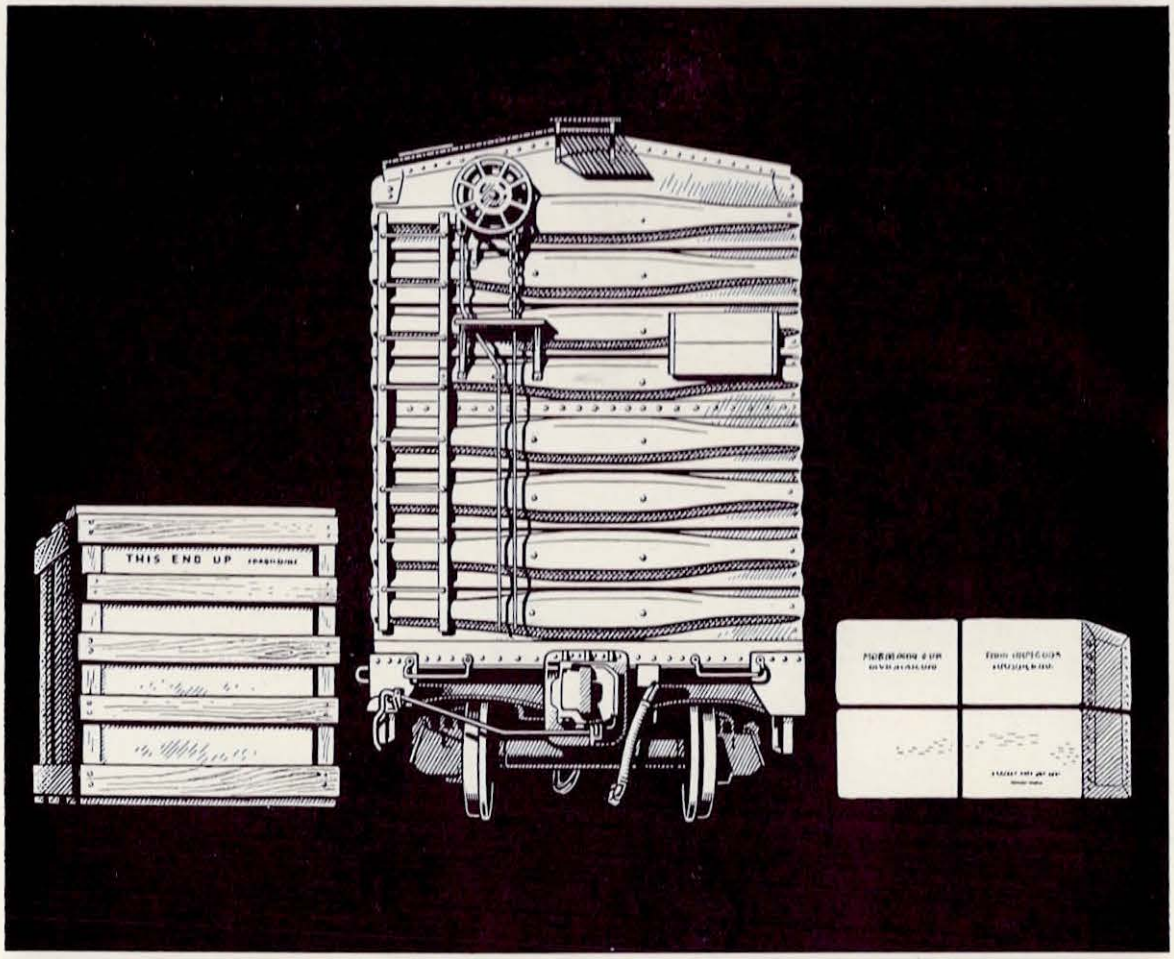
Robert E. Woodruff
President, Erie Railroad



IN CANADA Alco GE IS MLW GE

and GENERAL ELECTRIC

118-231

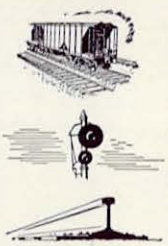


Crate · Carload · Carton ship *Katy*

You'll find Katy's versatile freight organization renders the same safe, swift, precision freight service to all types of consignments regardless of size.

Right down the line, Katy's manpower, motive power and mechanical facilities combine to give you more for your money, on the Southwest's Main Supply Line.

For dependable, careful, time-saving service to and from the Southwest . . . ship *KATY!*



Hundreds of New Cars . . . new gondola, hopper and box cars for added capacity, service and dependability via Katy!

Automatic Block Signals precision-control the movements of Katy's freight fleet to suit your every shipping need.

New 115-Pound Rail . . . mile after mile of improved-design, heavy-duty rail — along smooth roadbeds "manicured" to perfection.

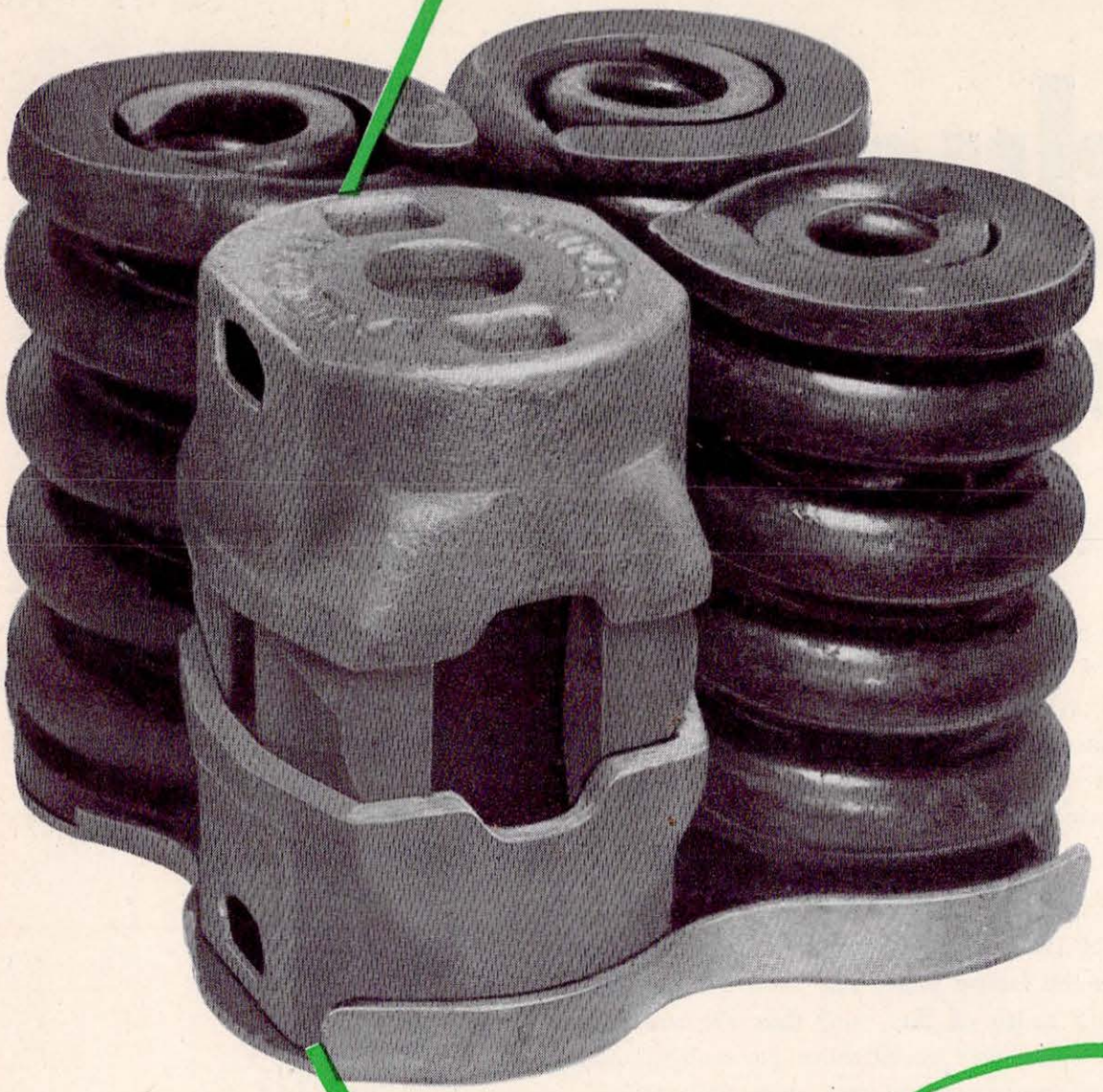
the **Katy**

M-K-T KATY RAILROAD MISSOURI-KANSAS-TEXAS

NATURAL ROUTE SOUTHWEST

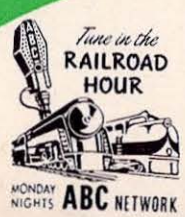
309

SIMPLEX *UNIT-TYPE* SNUBBERS



...for the Smoothest Ride an AAR COIL-SNUBBER GROUPING Can Deliver!

Ask for the PERFORMANCE Facts and Figures



AMERICAN STEEL FOUNDRIES

MINT MARK OF ⬡ FINE CAST STEEL

Baldwin diesel-electric locomotives

reducing costs

for the

SAVANNAH & ATLANTA

Supplanting a number of steam locomotives, all over 25 years old and at the high-maintenance stage, the new Baldwin power on the Savannah and Atlanta has already effected substantial savings in operating expenses, and promises to better the estimated nine-year amortization period to a considerable degree.

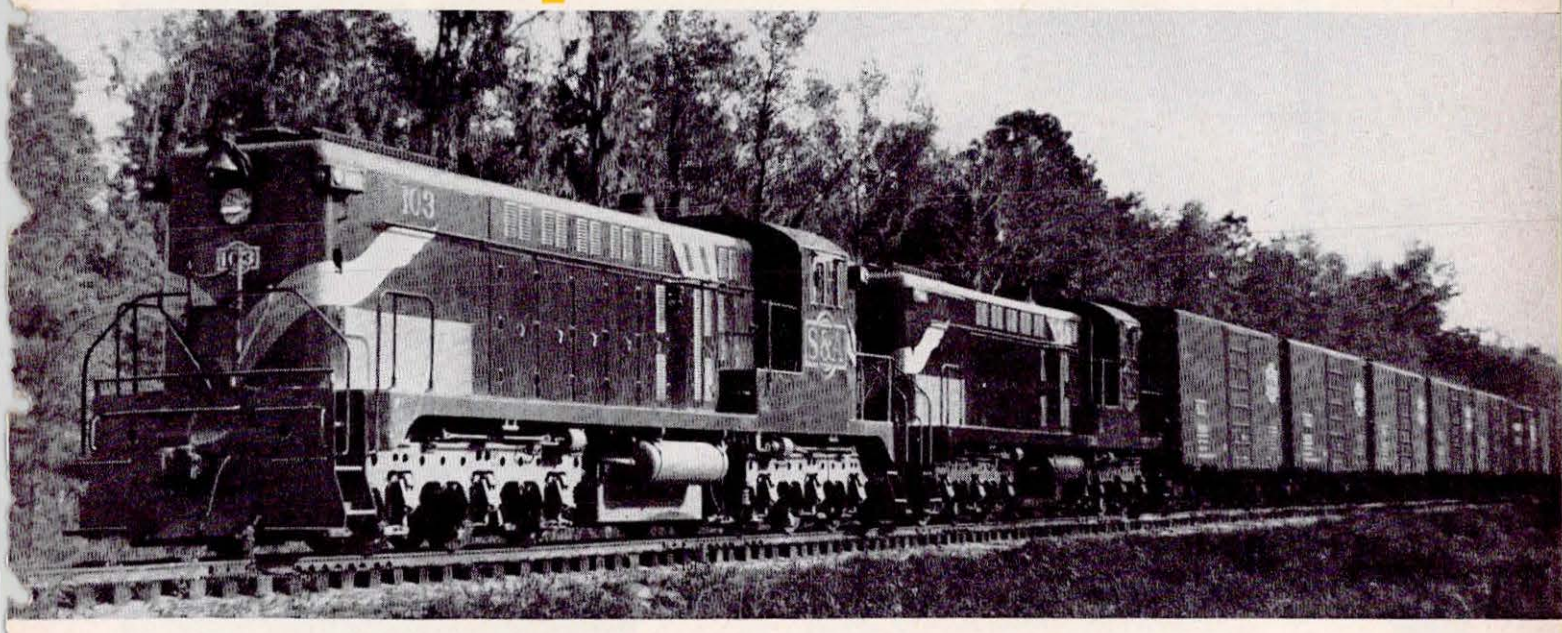
The first of the Baldwin 1,500-hp. Road-Switchers was received in May last year, and all eight were in service by July 1st. Some of the major improvements and economies are tabulated on the facing page. The fact that the S & A operates only 145 miles of line, and that the units have averaged only a little over 4,600 miles per month, makes the savings and the performance even more impressive.

Baldwin Road-Switchers have established some remarkable records on varied assignments for a number of major railroads. A Baldwin representative will be glad to make a survey, and determine where these Baldwin units can help reduce *your* costs.

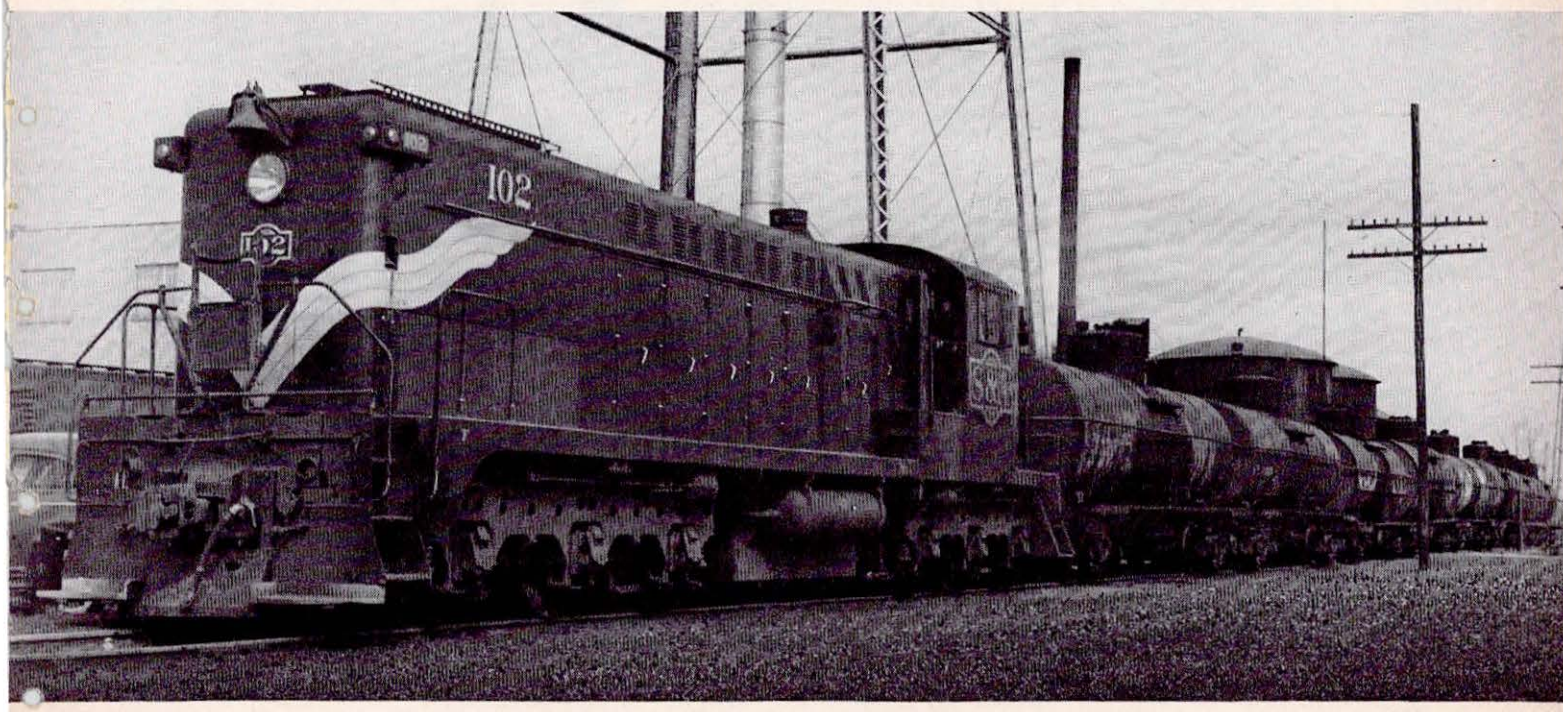
BALDWIN BLW THE BALDWIN GROUP

The Baldwin Locomotive Works, Philadelphia 42, Pa., U.S.A. Offices: Boston, Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis, Washington. In Canada: Canadian Locomotive Company, Ltd., Kingston, Ontario.

ECONOMIC FACTORS	COMPARATIVE OPERATING RESULTS
Gross ton-mi. per train-mi.	November 1948, diesel 1705; November 1947, steam 1407.
Trains handled	24 fewer trains operated in November 1948 with some increase in gross tonnage.
Fuel Costs — through freight	November 1948, diesel $3239; November 1947, steam $9416.
Fuel Costs — all services	November 1948, diesel $8019; November 1947, steam $19,024.
Tonnage per train — westbound	2 diesels 3000 tons; steam 2200 tons.
Tonnage per train — eastbound	2 diesels 3750 tons; steam 3000 tons.
Adaptability	Diesels used interchangeably for switching and road assignments.
Amortization	Estimated 9 years. Experience indicates this estimate will be bettered.

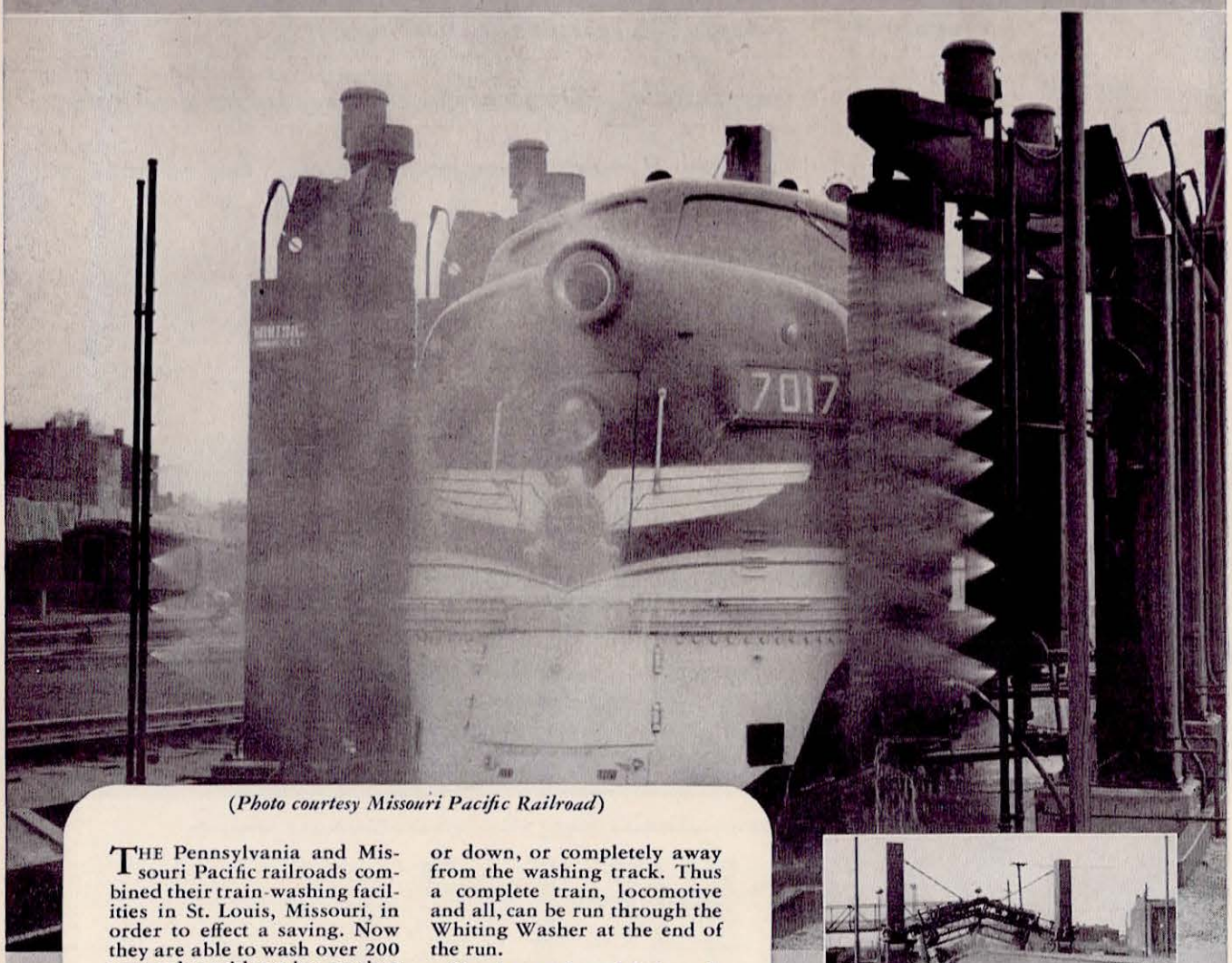


Two diesel units handle the regularly scheduled freight trains between Camak and Savannah.



The variety of industries served provides plenty of switching assignments at Savannah.

TWO ROADS COMBINE FACILITIES TO SPEED UP CAR WASHING with a WHITING TRAIN WASHER

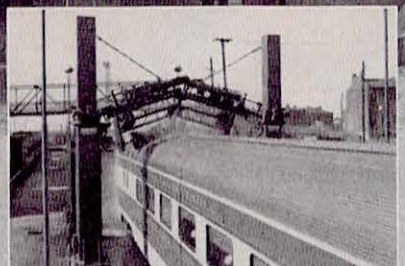


(Photo courtesy Missouri Pacific Railroad)

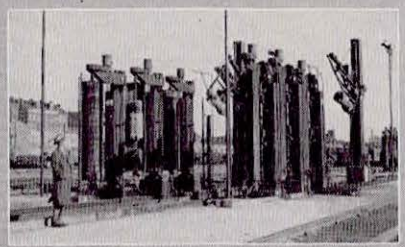
THE Pennsylvania and Missouri Pacific railroads combined their train-washing facilities in St. Louis, Missouri, in order to effect a saving. Now they are able to wash over 200 cars a day with no lay-up time involved, because slow, expensive hand-washing crews are eliminated.

They are using a Whiting Train Washer which operates at speeds up to 80 feet a minute. It has retractable roof brushes that may be moved up or down, or completely away from the washing track. Thus a complete train, locomotive and all, can be run through the Whiting Washer at the end of the run.

Single- and multiple-unit washer installations are engineered to meet your specifications for handling coaches, tenders, and locomotives. The retractable roof brush unit illustrated may be added readily to any existing installations. Write for Bulletin CWC-402.



Retractable roof brushes in action showing how overlap prevents dirt streaks.



Whiting Train Washer installation, showing side washers and retractable roof brushes.

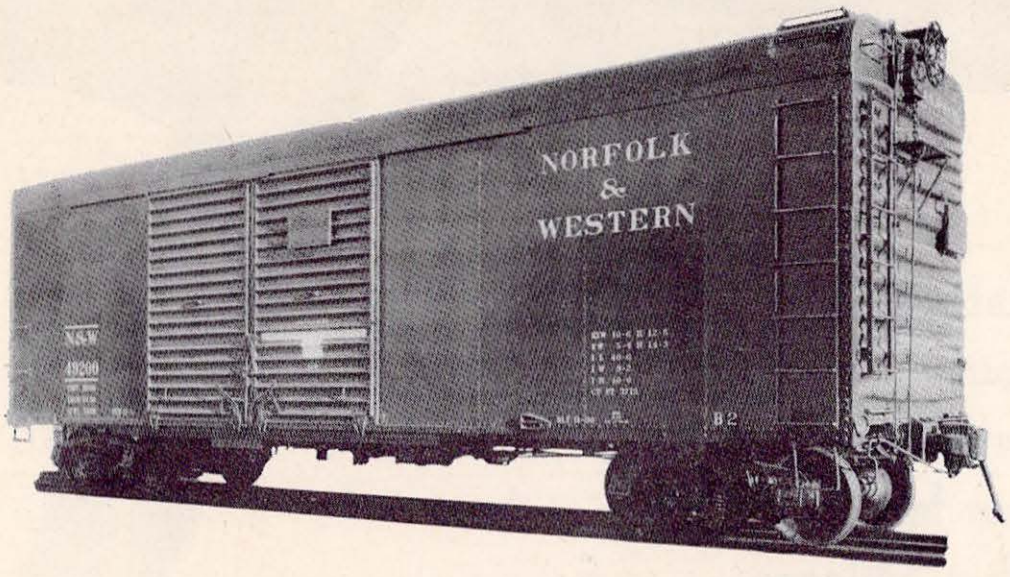
WHITING
CORPORATION

15603 Lathrop Avenue, Harvey, Illinois

RAILROAD MAINTENANCE EQUIPMENT

Offices in Chicago, Cincinnati, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, and St. Louis. Agents in other principal cities. Canadian Subsidiary: Whiting Corporation (Canada) Ltd., Toronto, Ontario. Export Department: 30 Church Street, New York 7, N. Y.

Magor



FOR

DESIGN AND MANUFACTURE

FREIGHT CARS

AUTOMATIC AIR DUMP CARS

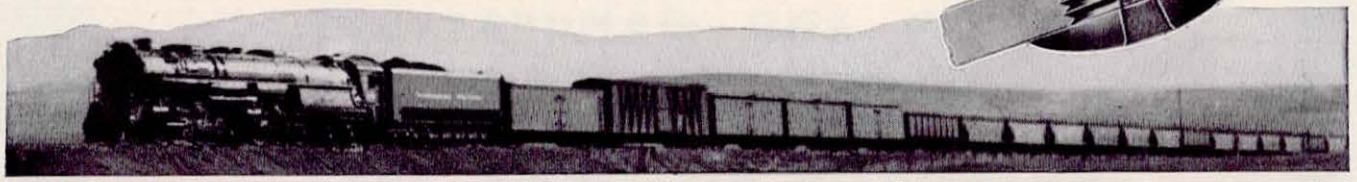
MAGOR CAR CORPORATION

50 CHURCH STREET, NEW YORK 7, N. Y.

HOLLOW *Flexible* STAYBOLTS

Provide —

Greater Safety
Maximum Economy
Increased Availability
Faster Inspections
Higher Mileage

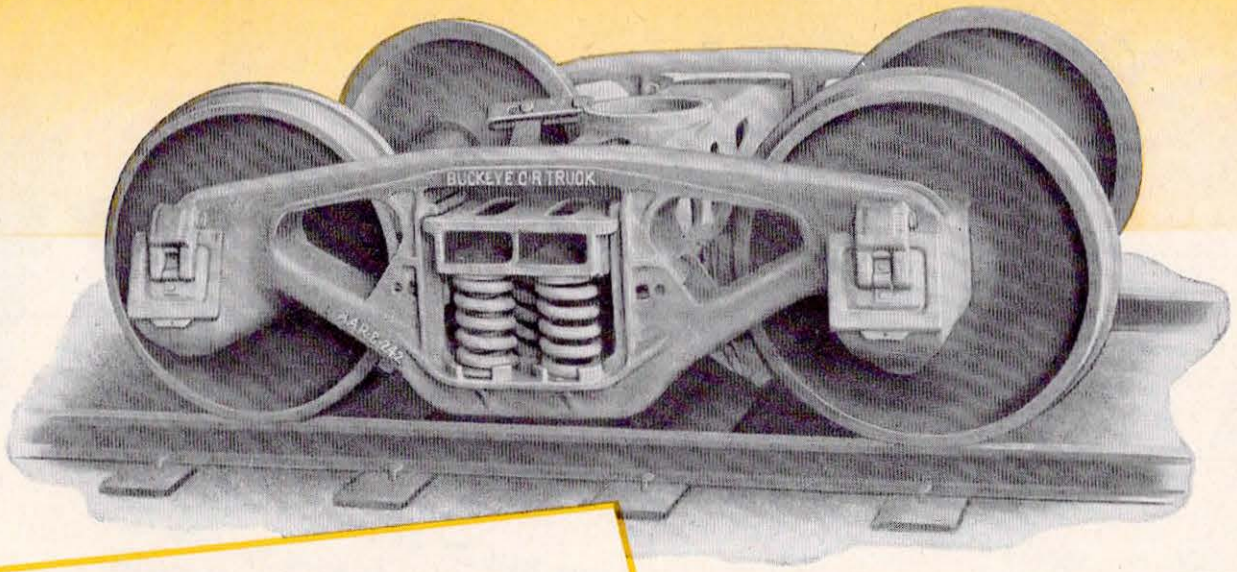


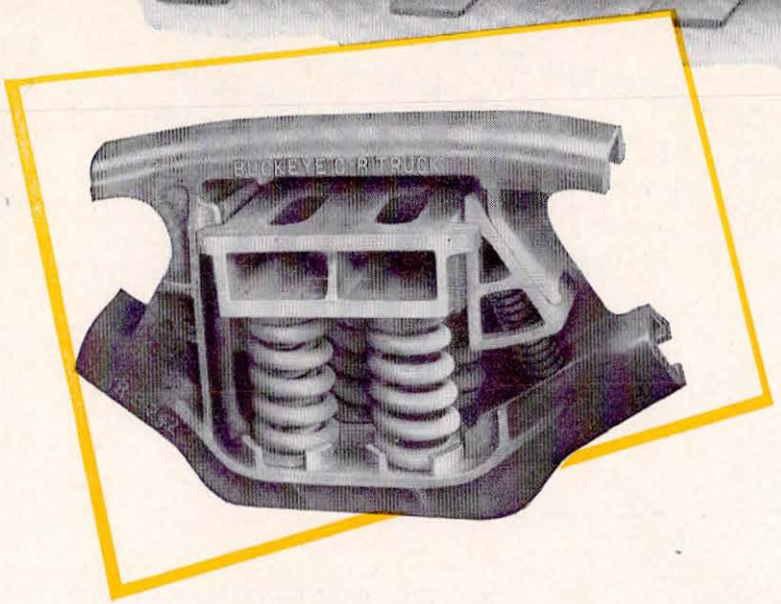
FLANNERY BOLT COMPANY

BRIDGEVILLE ★ PENNSYLVANIA

BUCKEYE C-R TRUCK

Cushion-Ride





The Buckeye Steel Castings Company furnishes the side frames, bolsters, and friction parts which, like other Buckeye products, meet all A.A.R. strength requirements.

The Buckeye C-R Freight Car Truck provides superior riding qualities, resulting in reduction of damage to lading, rolling stock, and road bed.

- **Vertical and lateral action are frictionally controlled and truck is self squaring, independent of the load.**
- **Symmetrical friction wedges pocketed in the side frame columns are reversible and provide maximum friction areas for reduced wear and long life of control parts.**
- **Full box section bolster end construction provides maximum strength and adaptability to various spring travels of 1-5/8" to 3-11/16" inclusive.**
- **Self cleaning friction parts prevent accumulation of dirt in service.**
- **Quick-Wheel-Change feature reduces maintenance cost.**

THE BUCKEYE STEEL CASTINGS COMPANY

New York, N. Y. Columbus, Ohio Chicago, Ill.

We changed from steam to an **Industrial Brownhoist Diesel Crane**

It paid for itself in four years!

Here are the figures to prove it:

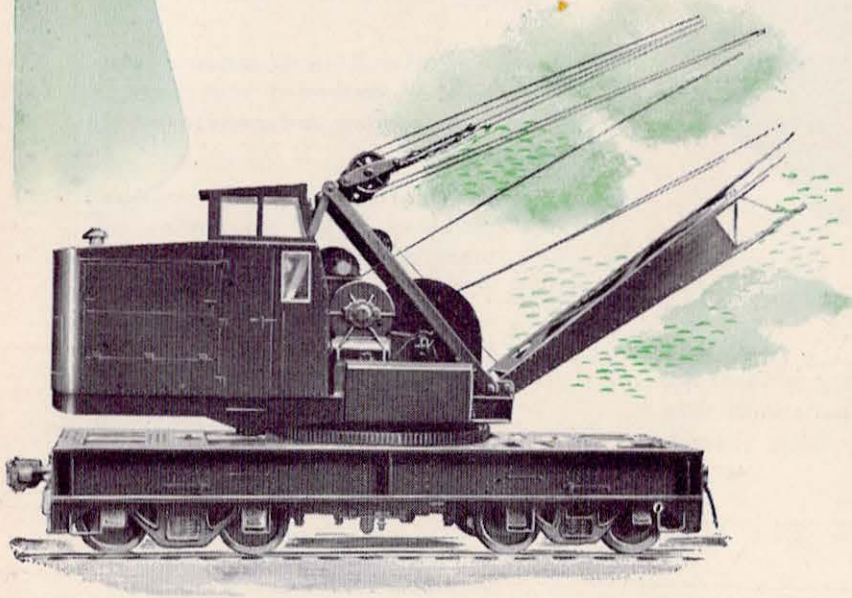
SAVINGS IN FUEL PER DAY $13.40
(Based on 1½ tons coal per day at $10 a ton, against 16 gallons of fuel oil at 10¢ a gallon.)

SAVINGS IN LABOR PER DAY $15.50
(Unproductive firing, banking, cleaning time — 2 hours for engineer at $1.75 per hour, and 8 hours fireman, at $1.50 per hour.)

TOTAL FUEL AND LABOR SAVINGS PER YEAR.. $7,514.00

AND WE INCREASED OPERATING TIME BY 65 DAYS A YEAR!

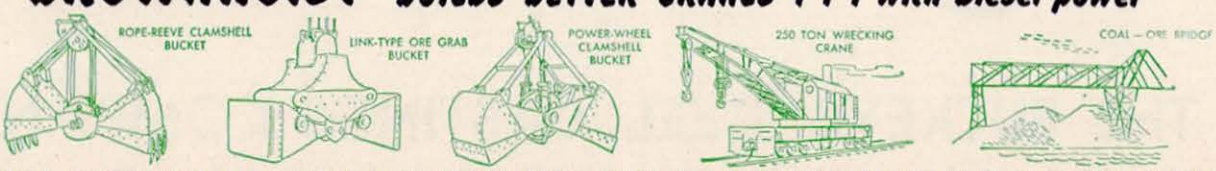
It takes two hours a day on the average for firing up, banking, taking coal and water, boiler washouts, etc. That figures to 10 hours a week, 520 hours a year, or 65 extra days of productive crane time each year.



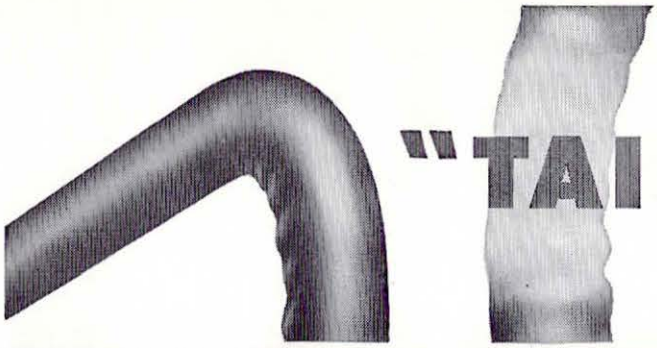
BESIDES THESE IMPORTANT EXTRAS:

Safer, cleaner operation; greater production and less operator fatigue because of air operated controls; reduced maintenance time, about one-half that of steam, and elimination of smoke nuisance and fire hazard. Write today for complete information.

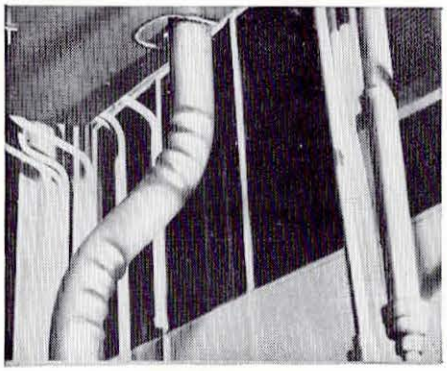
BROWNHOIST BUILDS BETTER CRANES . . . with Diesel power



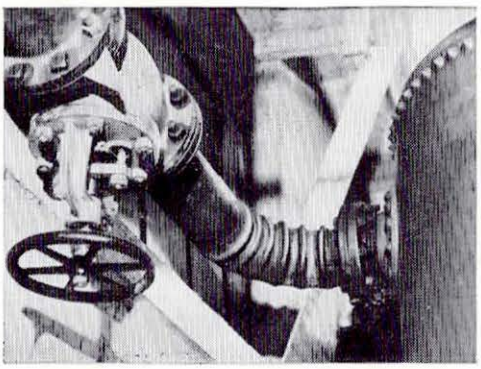
INDUSTRIAL BROWNHOIST CORPORATION • BAY CITY, MICH. • **DISTRICT OFFICES:** NEW YORK, PHILADELPHIA, CLEVELAND, CHICAGO • **AGENCIES:** DETROIT, BIRMINGHAM, HOUSTON, LOS ANGELES, PORTLAND, SAN FRANCISCO, SEATTLE, SPOKANE, CANADIAN BROWNHOIST LTD., MONTREAL, QUEBEC.



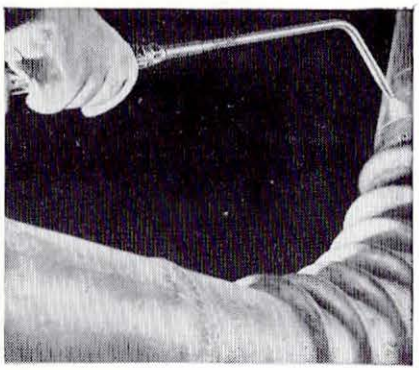
"TAILOR-MADE" bends



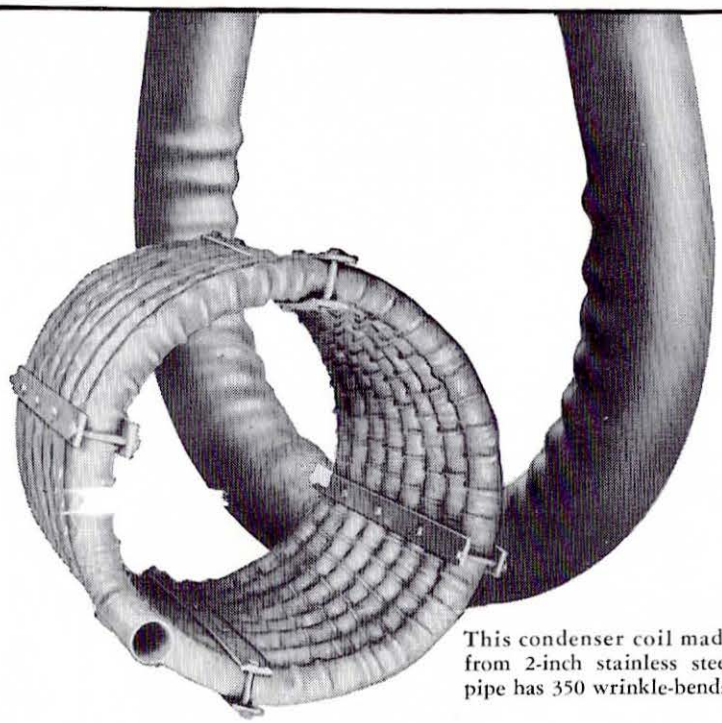
Wrinkle-bends are ideal for compound bends in continuous sections of pipe. Wrinkle-bends are leak-proof, as strong as the pipe itself, require no maintenance, and are easy to insulate.



This short-radius wrinkle-bend joins a compressed air line to a reservoir. Wrinkle-bends can be made in brass, copper, aluminum, and steel pipe from 2 inches to 26 inches in diameter.



Pipe bends can be made right on the spot with the aid of an oxy-acetylene welding blowpipe, a simple bending rig, and a few common tools. Wrinkle-bending does not reduce the thickness of pipe walls.



This condenser coil made from 2-inch stainless steel pipe has 350 wrinkle-bends.

OXWELD'S wrinkle-bending process makes possible "tailor-made" bends in water, steam, oil, and air lines in railroad shops, fueling and passenger stations, and other locations. This process decreases the need for purchasing and stocking many sizes of costly fittings.

Mechanical Superintendents and Foremen, Building Engineers — write for booklet F-4993—"How to Wrinkle-Bend Ferrous and Non-Ferrous Pipe." Please address The Oxweld Railroad Service Company, 230 N. Michigan Ave., Chicago 1, Ill.

THE OXWELD RAILROAD SERVICE COMPANY

Unit of Union Carbide and Carbon Corporation

UCC

Carbide and Carbon Building Chicago and New York

In Canada:

Canadian Railroad Service Company, Limited, Toronto

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

The word "Oxweld" is a registered trade-mark.

Balanced

Meals, Balanced Budgets by RAIL

Balancing the diets, without unbalancing the budgets, of some 150 million hale and hearty Americans, takes a lot of doing.

It takes wheat from Kansas, grapefruit from Texas, oranges from Florida and California, meat from the Prairie States... carloads of calories going and coming from coast to coast. It takes swift handling and sharp scheduling to prevent spoilage. It takes a transportation system that can move bulk loads *economically*.

It takes America's Railroads!

Thousands of box cars and reefers on the roll—*the A.C.F.-built kind* that can stand the strains of swifter runs... the *all-welded kind* that stay out of the repair shops... the *mass-produced* kind that give *more* revenue-producing miles per dollar of cost. American Car and Foundry Company, New York • Chicago • St. Louis • Cleveland • Philadelphia • Washington • Pittsburgh • San Francisco.

a.c.f. CAR BUILDERS TO AMERICA'S RAILROADS

Enduro-THRIFTY METAL OF 10,000 USES

RAILROAD PASSENGER CARS OF TOMORROW use stainless steel generously in their interiors both for utility and pleasing decorative effect . . . the luxurious touch that travelers do not soon forget. Mouldings, luggage racks, seat pedestals, window frames, flashing, decorative trim, kitchen and food serving equipment are the *last word* . . . in ENDURO.

TRAFFIC-BUILDING "EYE-APPEAL"... *via* STAINLESS STEEL

There's an eye-appeal about Republic ENDURO Stainless Steel that is nothing short of an *invitation to travel.* The luxury of spotless car interiors —wide stainless-framed windows, deep stainless-based seats and stainless panels—is one of the best traffic-builders railroads have at their command today! Time, cost, convenience being relatively equal . . . the traveler selects his *means* of travel by the margin of comfort, luxury of surroundings, feeling of security offered, safety and, above all, cleanliness.

ENDURO is enduringly beautiful . . . but it is that and more. It has a high strength-to-weight ratio, is corrosion-resistant, is easily cleaned, is not affected by heat or cold, possesses a surface that does not mar or tarnish, and lasts indefinitely.

The initial outlay may be slightly higher than for other less beautiful, less useful materials—but in reduced maintenance cost alone, this difference is quickly equalized. Meanwhile it is daily paying off in greater travel satisfaction, and therefore in increased traffic.

There are many ENDURO analyses, particularly suited to the specific needs of a broad range of applications. It will pay you to get full information. Write today to:

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, New York

Enduro **STAINLESS STEEL**

REG. U. S. PAT. OFF.

REPUBLIC STEEL

✓ **Check ALL 10 Advantages:** • RUST AND CORROSION-RESISTANCE • HEAT-RESISTANCE • HIGH STRENGTH • NO METALLIC CONTAMINATION • SANITARY SURFACES • EASY TO CLEAN • EYE APPEAL • EASY TO FABRICATE • LONG LIFE • LOW END COST.

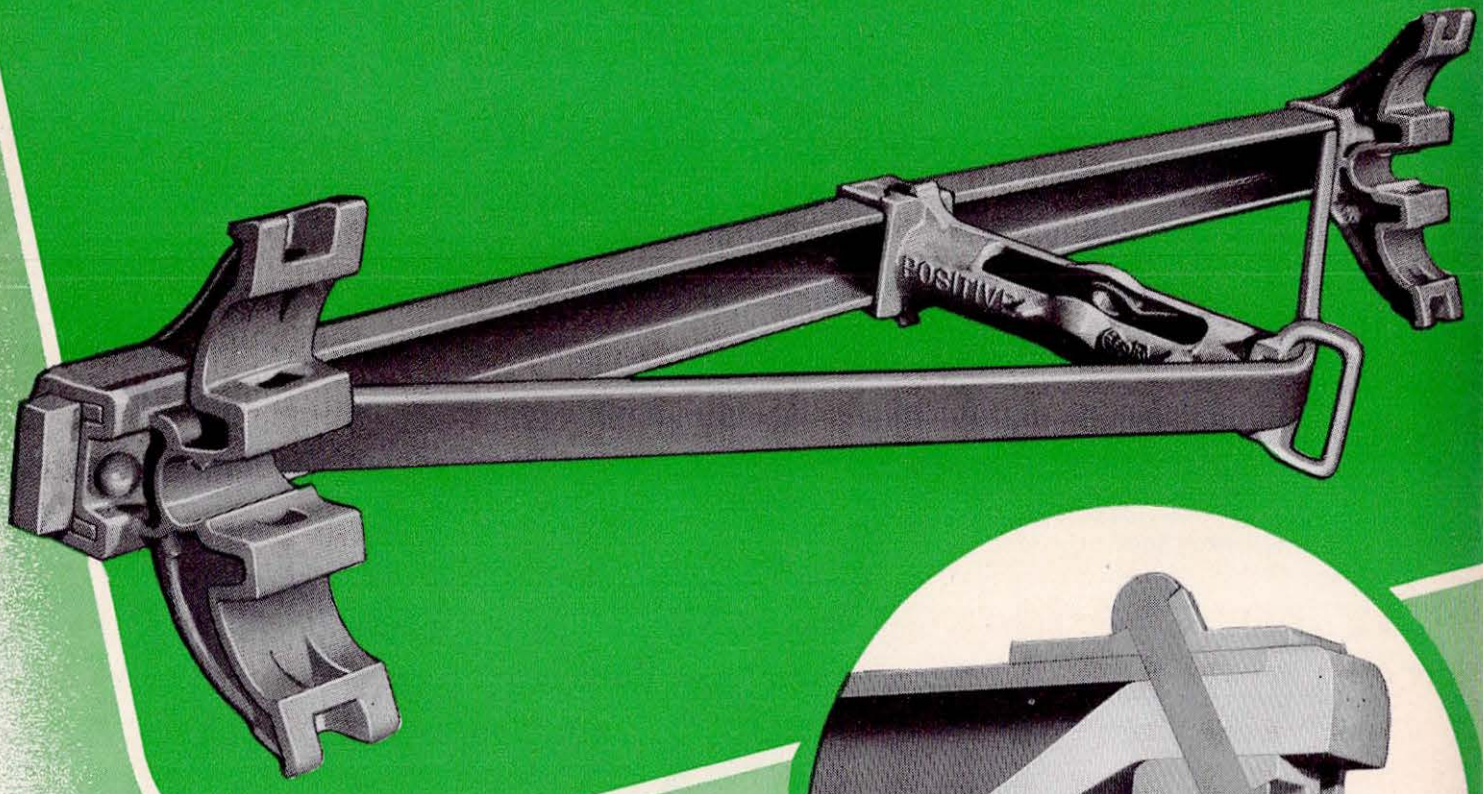
POSITIVE

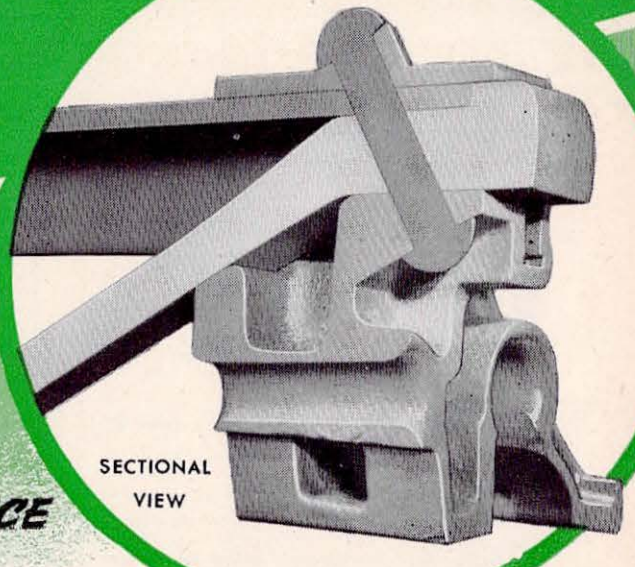
TRADE MARK

BRAKE BEAM

THE POSITIVE BEAM IS THE RAILROADS' DREAM

SAVES IN REPAIRS





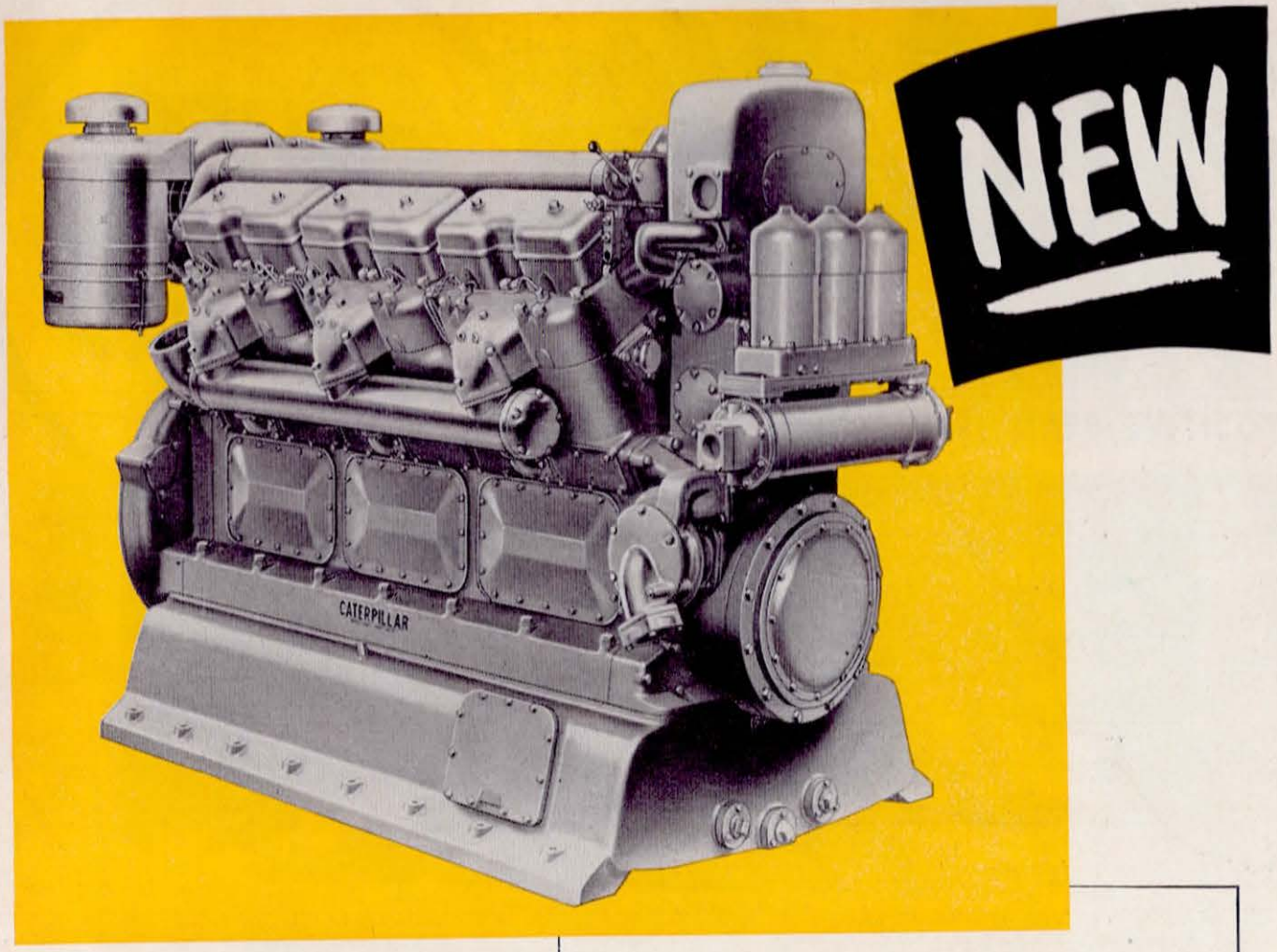
SECTIONAL VIEW

SUPERIOR IN DESIGN
RELIABLE IN PERFORMANCE

In service or on order from 63 railroads and private car lines

CHICAGO RAILWAY EQUIPMENT CO.

McCormick Building, Chicago

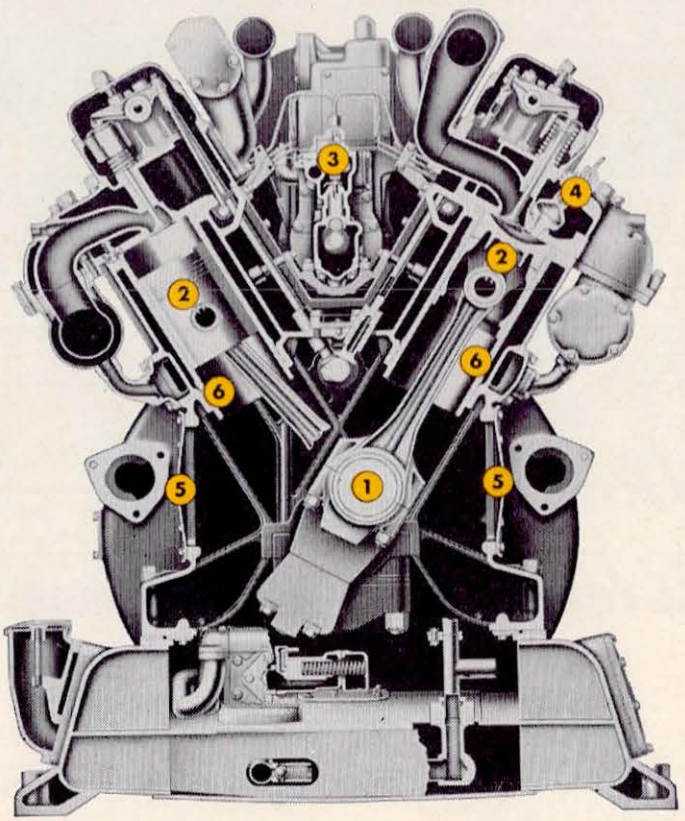


The 500-horsepower D397—biggest of the new "Caterpillar" Railroad Diesels. D386—400 horsepower. D375—335 horsepower. D364—265 horsepower.

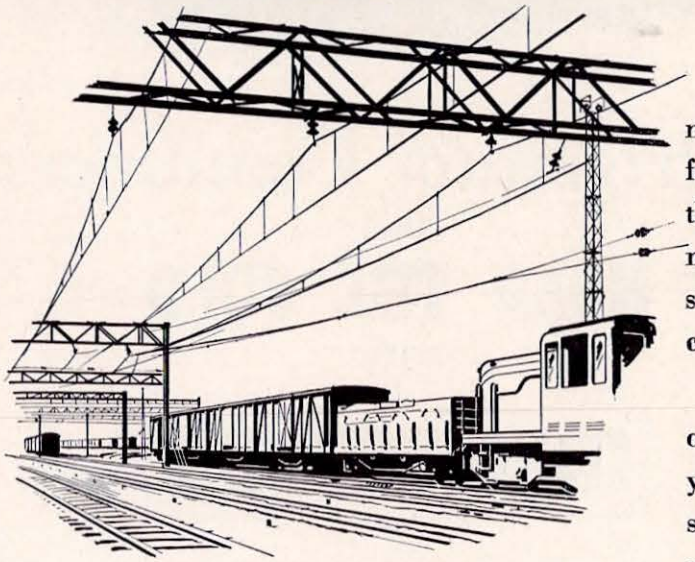
•

DESIGNED FOR STURDINESS, EFFICIENCY, LONG LIFE—AND EASY SERVICING

1. Extra large, induction-hardened crankshaft.
2. Oil-cooled, aluminum alloy pistons.
3. Interchangeable fuel injection pumps.
4. Non-clogging, single-orifice, fuel injection valves.
5. Large inspection openings for removal of pistons, rods and bearings.
6. Induction-hardened, alloy iron, wet type cylinder liners.



BIGGER "CATERPILLAR" DIESELS FOR BIGGER RAILROAD JOBS

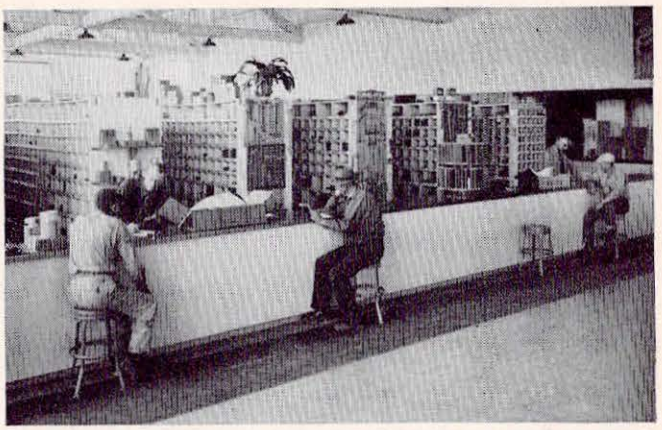


THE wide popularity of "Caterpillar" Diesel Engines is convincingly attested by the fact that they are powering more than 90 per cent of all 44-tonners on Classes I, II and III railroads.

With the addition of four great new models, "Cat" Diesels are now being built up to 500 horsepower. Thus, these familiar Railroad Diesels become available for use in an extended range of locomotives and railcars . . . bringing with them the outstanding economy, dependability, long life, and easy servicing that have been so thoroughly proved in other models.

These new Diesels are built in the world's most modern engine factory—where precision manufacture and inspection controls are used to build the finest product of its kind. The designs are a natural development of current models of the same bore and stroke, checked by many years of careful research.

Specify "Caterpillar" Railroad Diesels when ordering new railcars and new locomotives, and you'll be sure of maximum availability and unsurpassed performance. For complete engine specifications, write to Railroad Power Division, CATERPILLAR TRACTOR CO., PEORIA, ILL.

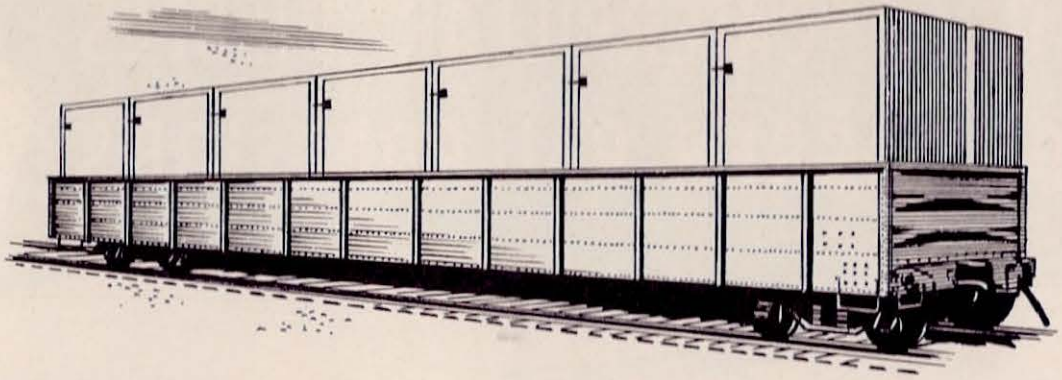


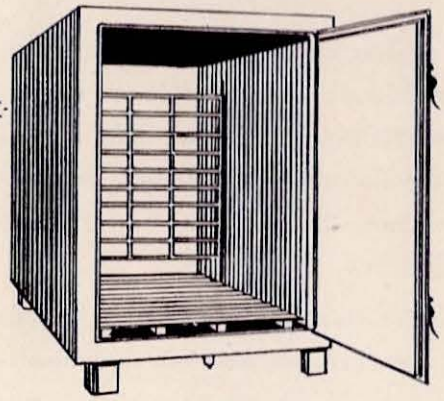
COMPLETE PARTS AND SERVICE FACILITIES EVERYWHERE
—making it unnecessary for a railroad to tie up its own funds in parts stocks.

CATERPILLAR
REG. U. S. PAT. OFF.
RAILROAD DIESELS

ENGINES
TRACTORS
MOTOR GRADERS
EARTHMOVING EQUIPMENT

WHEN YOU THINK OF RAILROAD POWER, THINK OF THE BIG "CAT" DIESELS





Refrigerator Containers

THAT

HOLD THE COLD

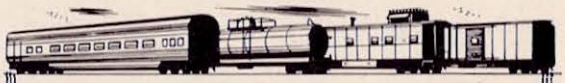
WITH

INSL-COTTON

Minimum weight with maximum protection against temperature changes makes Insl-Cotton ideal for use in refrigerator containers.

This light-weight, high-efficiency insulation weighs only .875 pounds per cubic foot, yet has the amazingly low thermal conductivity of 5.7, or a "K" factor of 0.24 per hour. It will not pack or settle, will not harbor vermin or rodents (actually repels them) and is highly resistant to moisture.

It takes less than 75 pounds of Insl-Cotton to completely insulate a standard 10,000-pound container with a 3″ barrier against heat or cold. Insl-Cotton is exceptionally easy to handle and install; it goes in fast, and leaves no air-admitting gaps between precision-cut edges. It can be compressed between structural members, and tucks easily into hard-to-reach spots.



The insulating value and sound-deadening qualities of Insl-Cotton make it ideal for use in passenger cars, refrigerator and tank cars, cabooses and buildings. Every lot is tested and certified as to weight, density, thickness and flame-proof qualities. Insl-Cotton *permanently* retains its flame-proof qualities.

YOU CARRY MORE PAYLOAD... AND LESS INSULATION LOAD... WHEN IT'S INSL-COTTON!

FOR UPHOLSTERY: FLAME-PROOF INSL-COTTON UPHOLSTERY FELT

For complete information and specifications — write to

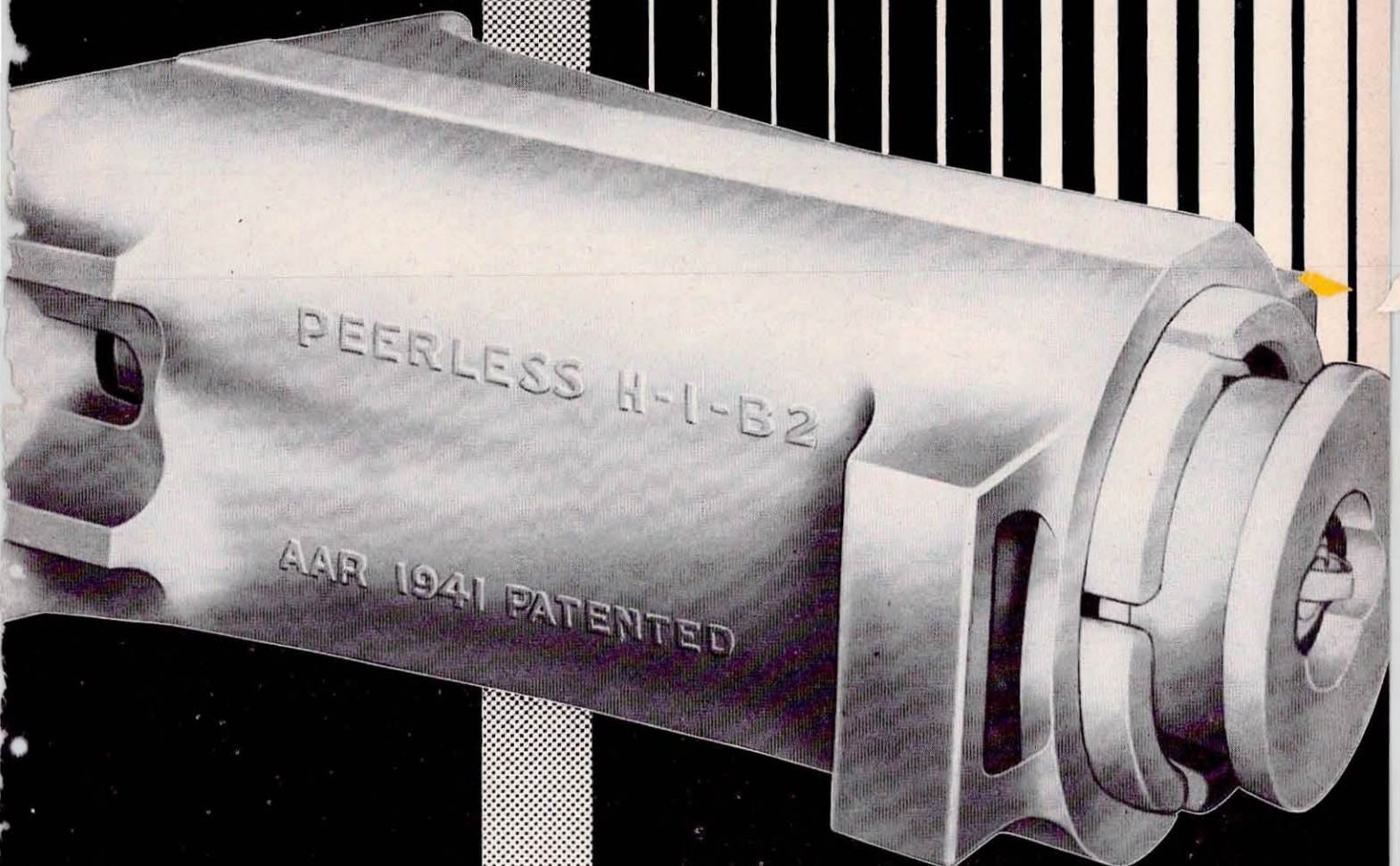
J. J. PRENDERGAST

Alfred Engineering & Equipment Co.
515 Cotton Exchange Bldg., Dallas, Texas
National Distributor of Insl-Cotton for Railroad Use

INSL-COTTON DIVISION • *Taylor Bedding Mfg. Co.*

TAYLOR, TEXAS

SHOCK



ABSORPTION

Railroads can't afford to risk today's high-priced lading . . .
the Peerless H-1-B2 . . . Your best insurance against loss

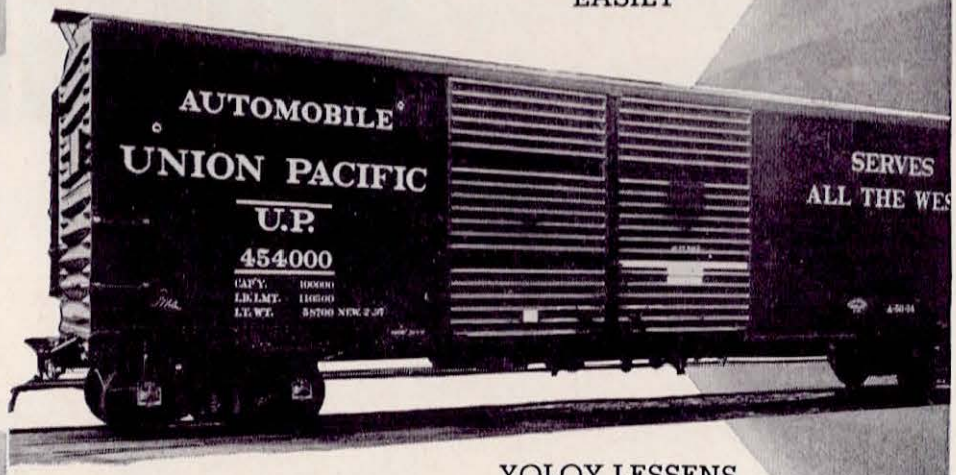
PEERLESS EQUIPMENT CO.

332 SOUTH MICHIGAN AVENUE • • CHICAGO 4, ILLINOIS

Yoloy stars with 5-point performance

YOLOY
INCREASES
PAYLOAD

YOLOY
FABRICATES
EASILY



YOLOY
REDUCES DEADWEIGHT
HAUL

YOLOY LESSENS
MAINTENANCE
EXPENSE

YOLOY
LENGTHENS
USEFUL
LIFE

QUALITY
YOUNGSTOWN
SERVICE

TWELVE years of railroad service demonstrate the practical value of Yoloy for this era of rising costs.

Yoloy--Youngstown's high strength, nickel--copper, low alloy steel--has unusual ability to resist corrosion. This property, coupled with extreme toughness and strength, permits Yoloy to be used in thinner sheets and lighter structural members, without any reduction in overall strength or durability.

For freight and passenger car construction, this means a substantial saving in weight. Weight saving, of course, reflects immediately in less dead weight hauling and increased payloads. Yoloy fabricates readily, maintenance and repair are less, and useful life of the rolling stock is extended.

YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

GENERAL OFFICES - YOUNGSTOWN 1, OHIO

Export Offices - 500 Fifth Avenue, New York City

Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

Sheets - Plates - Pipe and Tubular Products - Bars - Rods - Wires - Cold Finished Carbon and Alloy Steel Bars - Tie Plates and Spikes - Conduit - Electrolytic Tin Plate - Coke Tin Plate.

"Train of Tomorrow" Follows the Swing to "Sleepy Hollow" Comfort

The "Train of Tomorrow" previews a more comfortable future for travelers. Yet the exclusive "Sleepy Hollow" design of modern Heywood-Wakefield seating is already building good will for the progressive railroads which have installed it in their new equipment.

Tailor-made alterations in outward appearance can be arranged to harmonize completely with the design and decor of your new equipment.

GOOD IN 1936

Coaches of the '30's presented a marked improvement in appearance. Yet, even with Heywood-Wakefield seating, they were not quite as comfortable as they looked.

HEYWOOD-WAKEFIELD
EST. 1826
REG. U. S. PAT. OFF

Transportation Seating Division
Gardner, Mass.

BEST TODAY

The General Motors "Train of Tomorrow" is not only revolutionary in appearance. Its Heywood-Wakefield "Sleepy Hollow" seats make it an equally notable advance in comfortable *travel.*

PUT HANDLING COSTS ON THE RIGHT TRACK

640 billion ton miles of rail freight traffic were handled last year—71% more than in 1940. To keep up that pace and build profits, the use of mechanical handling equipment must be extended even further than it has been in the past.

Yale Material Handling Machinery has been helping American railroads move freight fast and efficiently for years, at low cost. In shops and stores departments Yale Hoists, Trucks and Scales likewise provide the money-saving performance that assures top economy.

New Yale material handling and weighing equipment is now available to help you do an even better job of keeping "on time" in all railroading operations. Put your handling costs on the right track. Call on your Yale railroad representative for experienced counsel in low-cost handling methods. Or, write direct to headquarters.

THE YALE & TOWNE MANUFACTURING COMPANY

Department L-44 · Roosevelt Boulevard · Philadelphia 15, Pa.

YALE
TOOLS THAT KEEP INDUSTRY "ON THE MOVE"

RAILWAY REPRESENTATIVES:

CHICAGO 1, ILLINOIS
The Earl E. Thulin Company
Suite 339, Hotel Sherman

CLEVELAND 15, OHIO
C. E. Murphy
923 Midland Building

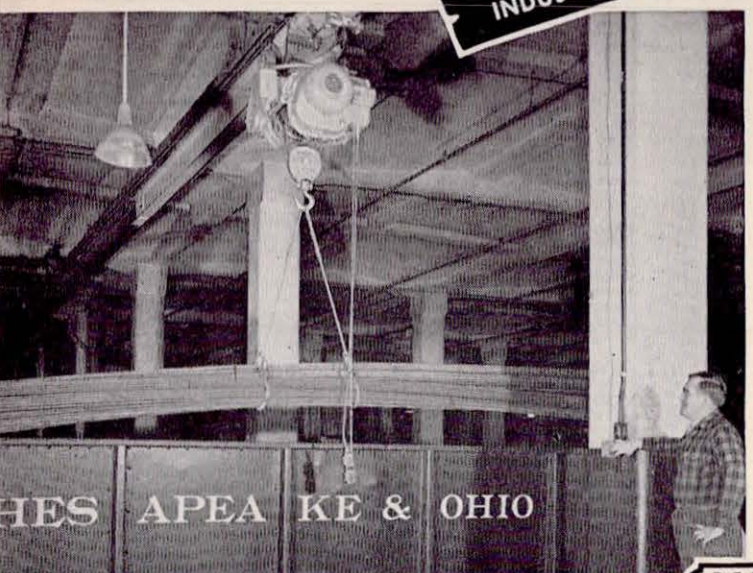
NEW YORK 17, NEW YORK
Eastern Railway Supplies, Inc.
110 East 42nd Street

SAN FRANCISCO 5, CALIFORNIA
Overland Supply Company
55 New Montgomery Street

ST. LOUIS 1, MISSOURI
Clarence Gush
Railway Exchange Building

ST. PAUL 4, MINNESOTA
Robert J. Wylie
2300 University Avenue

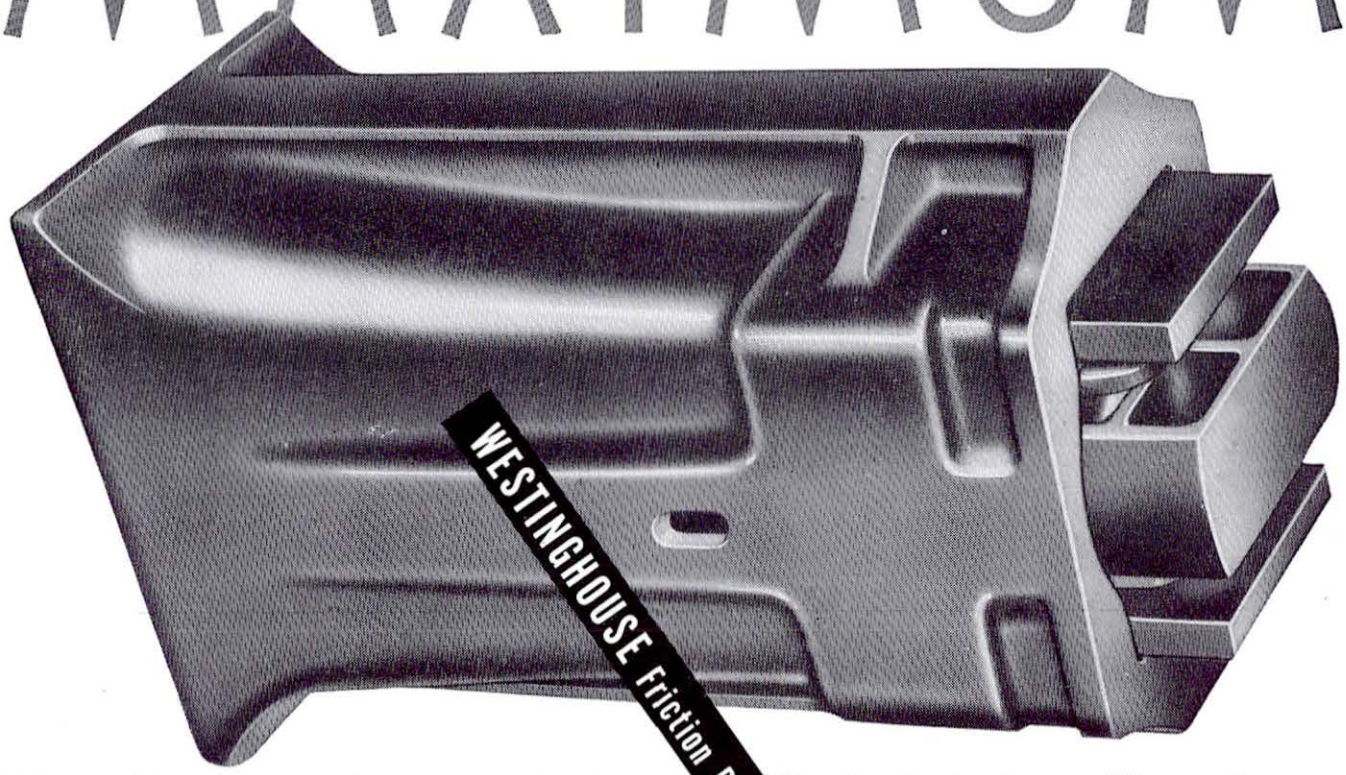
WASHINGTON 5, D. C., Ralph W. Payne, Metropolitan Bank Building



YALE

MATERIAL HANDLING MACHINERY · *hoists . . . hand and electric · trucks . . . hand lift and power · industrial dial scales*

MAXIMUM



PROTECTION

in all respects

CARDWELL Friction Bolster Spring for A.A.R. and Long-Travel Springs

2688

Cardwell and Westinghouse shock-absorbing devices protect rolling stock against excessive horizontal, vertical, lateral and angular forces. They are designed with a high factor of safety, resulting in capacities well above the requirements.

Over 98% of the cars in freight carrying service are A.A.R. construction and over 96% have Friction Draft Gears.

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

This Baby Needs Too Many New Shoes

You'd be surprised how fast a railway car can wear out brake shoes. It can run as high as 665 in a year. Their replacement costs $1662.

The Budd Company sells a brake that will do the same amount of work at a yearly maintenance cost of $343.50 . . . and do a much better job of stopping trains.

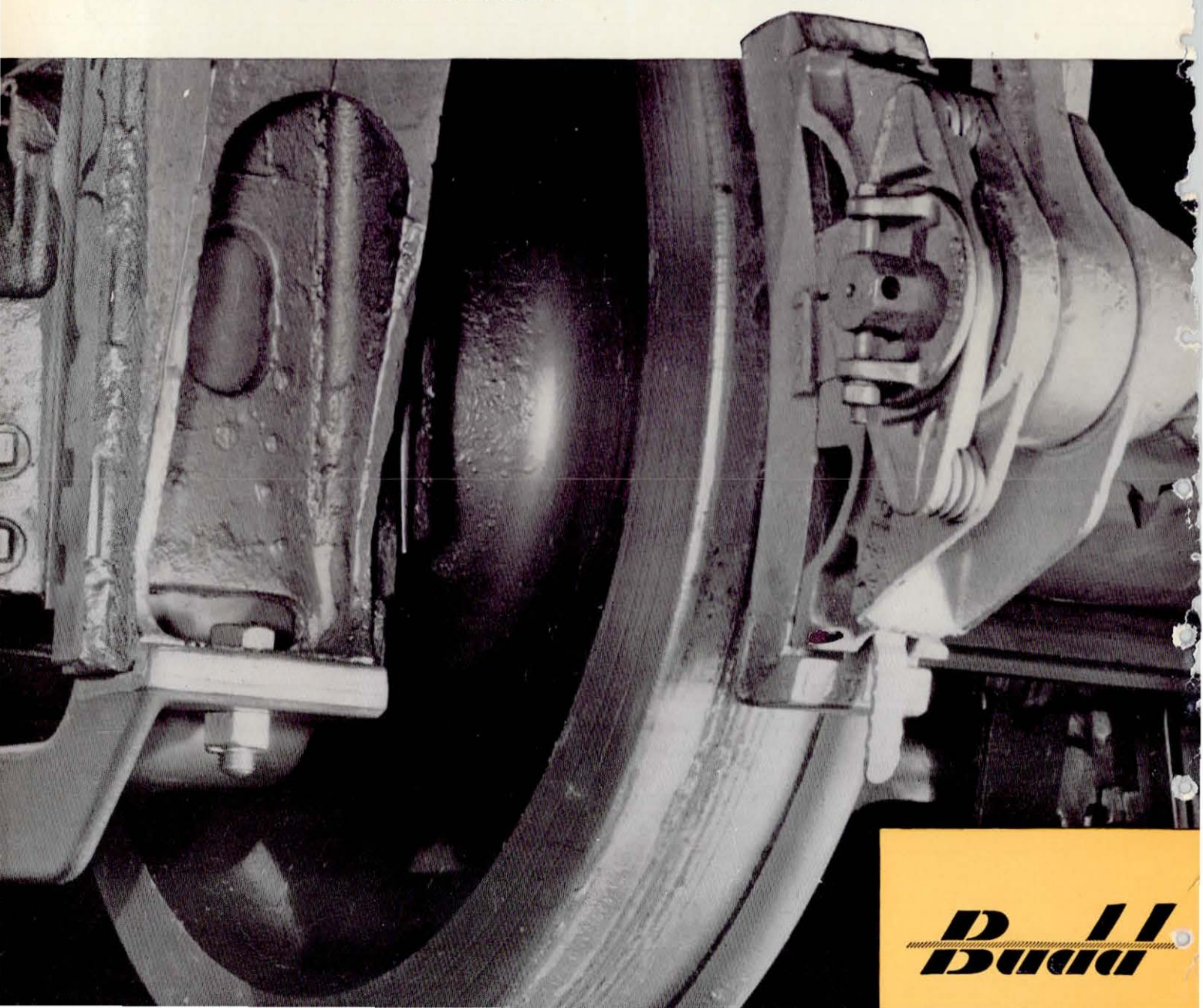
This brake, the Budd railway disc brake (Model CF), is being installed on many of the new cars now under construction both in the Budd plant and in other car builders' shops. Behind it stand millions of miles of proved ability. Ahead of it, we believe, lies one of the great contributions to better and more economical railroad operation.

It certainly will if it follows the now-familiar pattern established by other Budd developments—the all-steel automobile body, the steel disc automobile wheel, and lightweight, stainless steel railway passenger cars.

In each case the course of an entire industry was changed, for no inertia of tradition or habit can withstand the impact of better products made of superior materials with challenging design.

For The Budd Company these endeavors have proved both profitable and satisfying. There's satisfaction in becoming the world's second largest builder of railway passenger cars in only 15 brief years . . . the world's largest independent builder of automobile body components . . . and a position in the automobile wheel industry where, in addition to millions of passenger car wheels, Budd Wheels for trucks, trailers and buses outsell all other makes in the world combined.

The Budd Company, Philadelphia, Detroit.



Budd

• *The advertisement on the facing page appears in* FORTUNE MAGAZINE *in July. Readers of this publication, who form a highly influential segment of our population, have heard little about railroads except higher costs, lower earnings. It is important that they should also know of developments which can lower costs and improve earnings, and at the same time raise the standard of passenger car service. The Budd railway disc brake (Model CF) does all of these things. The Budd Company, Philadelphia 32.*

BENDIX-SCINTILLA

A Sure Sign of Finer Fuel Injection Service!

ARIZONA

Phoenix, "Charlie" C. Jones Battery & Electric Co., 318 W. Jefferson St.

CALIFORNIA

Los Angeles 21, Magneto Sales & Service Company, 751 Towne Ave.

San Diego 1, Magneto Sales & Service Company, 1254 Kettner Blvd.

San Francisco 3, Furrer & Uster, Inc., 225 7th Street

San Francisco 3, H. G. Makelim Magneto Repair Co., 1583 Howard St.

COLORADO

Denver 3, Central Supply Co., 1171 Lincoln St.

FLORIDA

Miami, Diesel Service Company, 1930 North Miami Ave.

GEORGIA

Atlanta 3, Auto Electric & Magneto Co., 477 Spring St., N. W.

ILLINOIS

Chicago 16, Illinois Auto Electric Co., 2011-37 Indiana Ave.

IOWA

Des Moines 9, Electrical Service & Sales Co., 1313 Walnut St.

LOUISIANA

New Orleans, John M. Walton, Inc., 1050 Carondelet St.

MARYLAND

Baltimore 1, Parks & Hull Automotive Corp., 1033 Cathedral St.

MASSACHUSETTS

Boston 15, W. J. Connell Co., 121 Brookline Ave.

MICHIGAN

Detroit 2, Knorr-Maynard, Inc., 5743 Woodward Ave.

MINNESOTA

Minneapolis 2, Reinhard Brothers Co., Inc., 11 South 9th St.

MISSOURI

Kansas City 8, Electrical & Magneto Service, Inc., 2538 Grand Ave.

St. Louis 3, Electrical Parts & Service Co., 2900 Washington Blvd.

St. Louis 23, Diesel Fuel Injection Service Co., 9806 South Broadway.

NEBRASKA

Omaha 2, Carl A. Anderson, Inc., 16th & Jones St.

NEW JERSEY

Newark 2, Tire Trading Co., 239 Halsey St.

NEW YORK

Brooklyn 16, E. A. Wildermuth, Inc., 1102 Atlantic Ave.

Buffalo 8, Hettrich Electric Service, 1032 Ellicott St.

New York 23, The Durham Company, Inc., 17 West 60th St.

Syracuse 4, S. A. Crossman, Inc., 943 W. Genesee St.

Troy, Ehrlich Electric Service, Inc., 200 Fourth St.

OHIO

Cleveland 14, Cleveland Ignition Co., 1301 Superior Ave., N.E.

OKLAHOMA

Tulsa 3, Magneto Ignition Co., 701 W. 5th St.

OREGON

Portland 14, Automotive Products, Inc., 1700 Southeast Grand Ave.

PENNSYLVANIA

Philadelphia 32, J. W. Parkin, Jr., 2251 N. Broad St.

Pittsburgh 6, Automotive Ignition Co., 6358-64 Penn Ave.

TENNESSEE

Memphis 4, Automotive Electric Service Co., 982 Linden Ave.

TEXAS

Houston 1, Beard & Stone Electric Co., Milam at Polk St.

Houston 11, Magneto & Diesel Injector Service, 6931 Navigation Blvd.

VIRGINIA

Norfolk, Diesel Injection Sales & Service, 710 Union St.

Richmond 20, C. H. Woodward Electric Co., Inc., 709 Broad St.

WASHINGTON

Seattle 14, Sunset Electric Co., 300 Westlake, North

Spokane 8, Sunset Electric Co., 1st & Adams St.

WISCONSIN

Milwaukee 8, Wisconsin Magneto Co., 918 North Broadway.

Send for Pocket List of Bendix-Scintilla Fuel Injection and Ignition Service Stations

This nation-wide Bendix–Scintilla Service Organization will help you maintain the high quality and efficient performance that are built into *all* Bendix-Scintilla Fuel Injection Equipment.

SCINTILLA MAGNETO DIVISION of Bendix AVIATION CORPORATION

SIDNEY, N. Y.

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, New York

COMPLETE *Finishing* SYSTEMS

for ENAMEL • LACQUER • PAINT

Exterior View of a Complete Mahon Finishing System Planned and Installed for the Coleman Company, Wichita, Kansas.

. . . an Investment in TOP EFFICIENCY and LOWER PRODUCTION COSTS!

Interior View on Ground Level Showing Mahon Hydro-Filter Spray Booths in Two Production Lines with Diffusers of Filtered Air Supply System Directly Above. Metal Cleaning and Rust Proofing, Spray Painting, and Dip Enameling Equipment are Located on the Ground Floor. The Filtered Air Supply System, Drying Ovens, Bake Ovens, Heating Units and Controls, and Recirculating and Exhaust Fans are located on the Second Floor Level.

Here, again, is a typical Mahon solution of a complex finishing problem...a complete self-housed finishing system planned from-the-ground-up, engineered and built by Mahon. A finishing system of this type, installed adjacent to manufacturing buildings, has many advantages . . . most important of which is freedom in planning, which results in 100% efficiency in production layout and equipment performance—all building restrictions and consequent compromises are eliminated, because the exterior housing is designed to fit the finishing system. The current trend in industry is toward this type of efficiently planned, self-housed finishing system to produce the finer sales-influencing finishes so important in marketing today. Where space adjacent to manufacturing buildings is not available, the complete system may be installed on the roof, in a court, or areaway. Remember, when you are contemplating new finishing equipment, that the Mahon organization has pioneered development in this highly specialized field for twenty-nine years . . . broad experience in every industry where finishing constitutes a major production operation, backed by constant research and experimentation, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere.

THE R. C. MAHON COMPANY

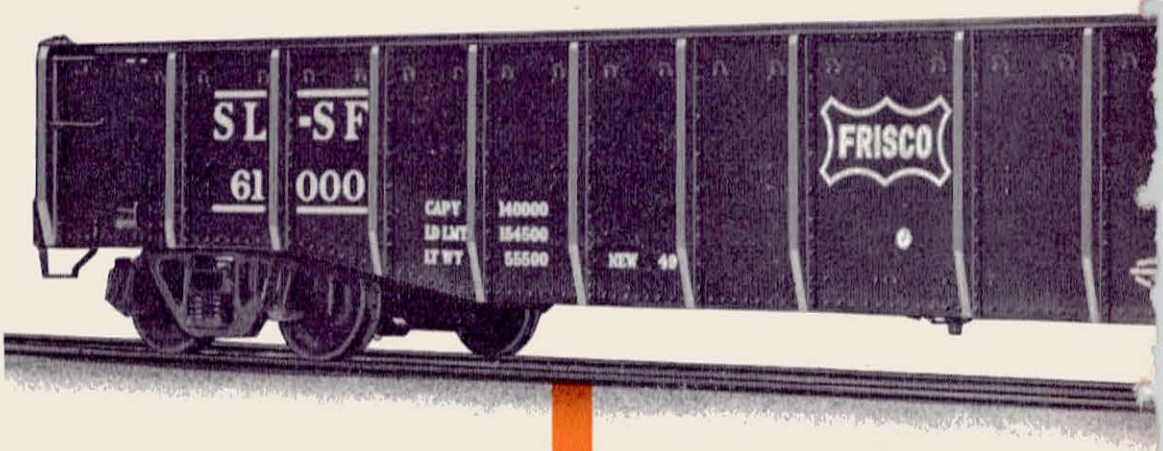
Home Office and plant, Detroit 11, Mich. • Western Sales Div., Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning and Rust Proofing Equipment, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, Drying and Baking Ovens, and Paint Reclamation Units. Also, Core Ovens, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

MAHON

Designed to defy

THE PULLMAN-STANDARD



This is a 70-ton capacity, 52'-6" all-steel gondola car with drop ends. Send for complete specifications.

This is the long-sought answer to costly grab-bucket damage. The Pullman-Standard Gondola is built especially to take that kind of punishment and minimize floor maintenance costs. This improved and modern railroad car has a smooth, all-welded, one-level floor. Gone are the usual obstructions of cross-member cover plates and a multiplicity of rivet heads.

Underframe and floor are completely welded into a sturdy, tight unit. With rivets and pockets eliminated, corrosion doesn't have the usual chance.

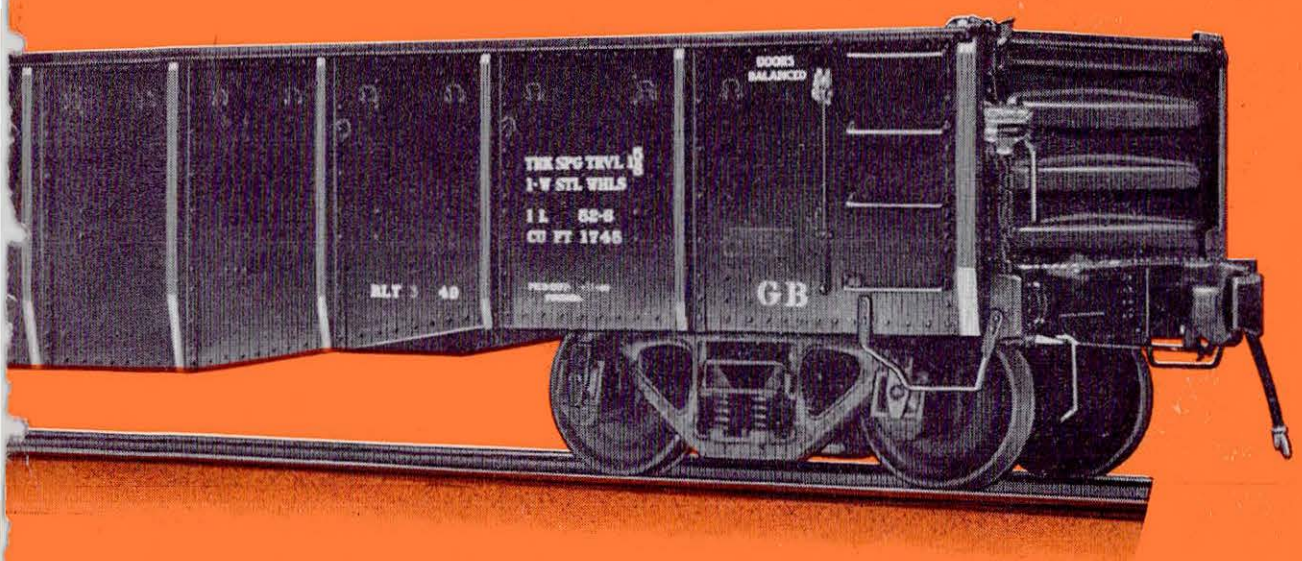
Again it's a plain case where Pullman-Standard's carbuilding experience counts. This gondola stays out on the line, working and earning, as a good gondola car should.

NOW'S THE TIME TO GET INTO THE "POOL"

Many railroads need gondolas . . . fast. Eager to do its part in putting revenue-building equipment on the rails, Pullman-Standard has established the means for standardizing and mass-producing this gondola car. It is suggested that railroads investigate the advantages of pooled production . . . faster delivery, lower costs, and sound, standardized construction.

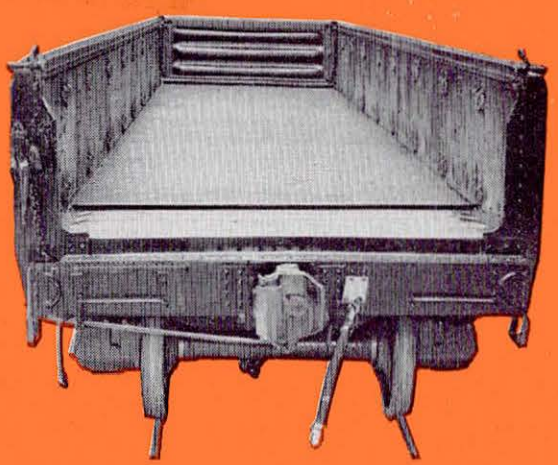
the grab bucket

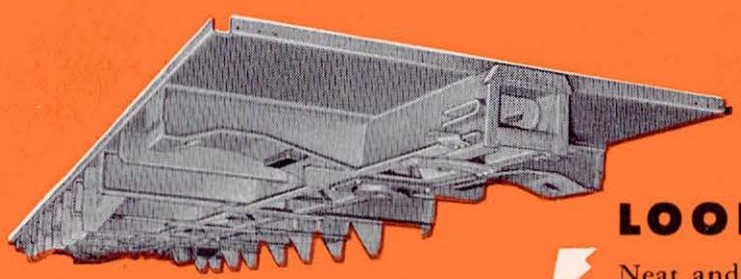
GONDOLA CAR



LOOK INTO IT...

With end gate down, this interior view of the Pullman-Standard Gondola shows the smooth, one-level floor. This rugged, low-side, drop-end gondola car is 52′-6″ long and has a capacity of 70 tons. The steel ends are Pullman-Standard make. The Pullman-Standard Gondola is *designed* to last longer.





LOOK UNDER IT...

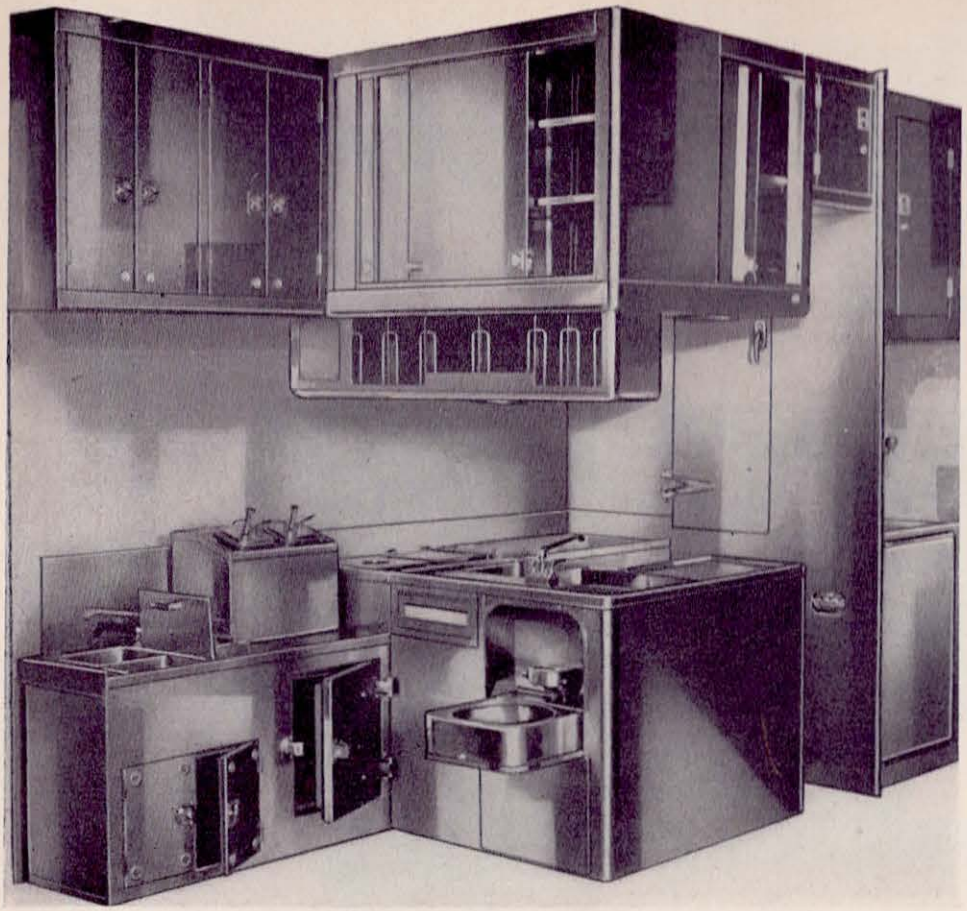
Neat and solid, the underframe and floor are welded into one sturdy, time-defying unit. Pullman-Standard design and construction always represent railroading's latest developments in the continuing battle against wear and corrosion. The stamina and thrift of this gondola are typical of all Pullman-Standard products.

Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH • BIRMINGHAM

SAN FRANCISCO SALES REPRESENTATIVE: MARK NOBLE



No bottleneck . . . in this Colonna Pantry!

This compactly designed pantry is one of several, along with kitchen equipment, which we have recently built for the new fleet of Pennsylvania Railroad dining cars. Its arrangement eliminates confusion and congestion in the diner's most critical spot. Here, one man handles the preparation and serving of portions. He is out of the waiters' way, thus allowing all possible space for routine service.

Occupying less space than the usual pantry, all equipment for fast, efficient service is included—high and low refrigerator with water cooler, glass storage locker and sterile lamp, ample overhead cabinets for pantry items, sized plate racks within waiters' easy reach, ice cream cabinet, cracked ice bin and glass washing sink. In addition, there is a folding wash basin and towel dispenser, a silver washing section with sterilizer, together with special juice dispenser, making for accelerated service of the first course and quick contact between patron and attendant. Everything is constructed of bright stainless steel for easy cleaning.

We can help you too with your dining car kitchen problems. Use our long experience in this field and do as many railroads when planning diners—call in Colonna.

ANGELO COLONNA
PHILADELPHIA, PA.

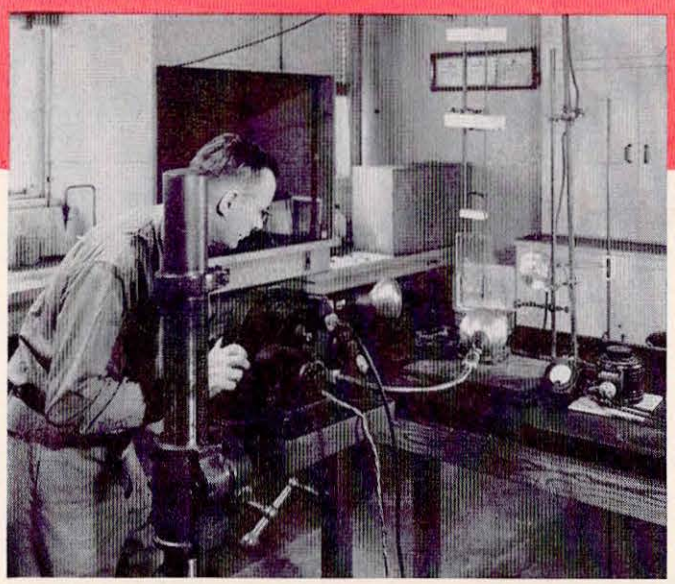
DEARBORN POLYAMIDE ANTI-FOAMS

Increase Locomotive Operating Safety

The improved polyamide anti-foam compounds manufactured by Dearborn are vital factors in increasing operating safety of locomotives since they provide protection against foaming, attacking the thousands of small bubbles instantly, eliminating water carryover, thereby protecting valves, cylinders, and superheater units from damage. By eliminating foaming, they allow maintenance of higher superheat and safeguard lubrication.

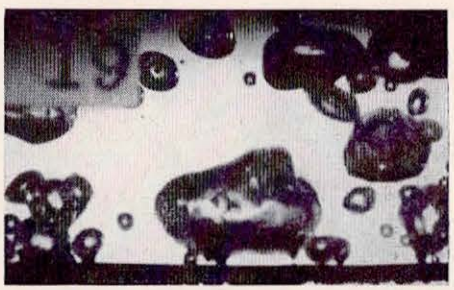
Dearborn Polyamide anti-foams increase heat transfer from the boiler metal, reducing stresses and minimizing leaks. In addition, the compounds, which can be added to any existing treatment and applied in smaller dosages by constant or intermittent feed, greatly increase steam purity and permit clean steam production at higher concentrations of total dissolved solids more efficiently.

There are Dearborn Polyamide anti-foams to meet all your foaming problems. Your local Dearborn representative will be happy to recommend the correct treatment.



In one of the Dearborn laboratories a research chemist takes high-speed motion pictures of foaming water in an experimental cell. This Fastex camera, mounted on a rigid, adjustable support and with high-power focusing lights, takes pictures up to 5,000 frames per second, permitting the study of foam inhibition and the superior action of polyamides.

Close-up showing the steam bubbles rising from a nichrome heating strip in a foaming solution. They strongly resist coalescence.



Close-up showing rapid coalescence of the steam bubbles at and above nichrome heating strip after adding polyamide anti-foam.

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THE LEADER IN BOILER WATER TREATMENT AND RUST PREVENTIVES

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Photo Courtesy Pressed Steel Car Company, Inc.

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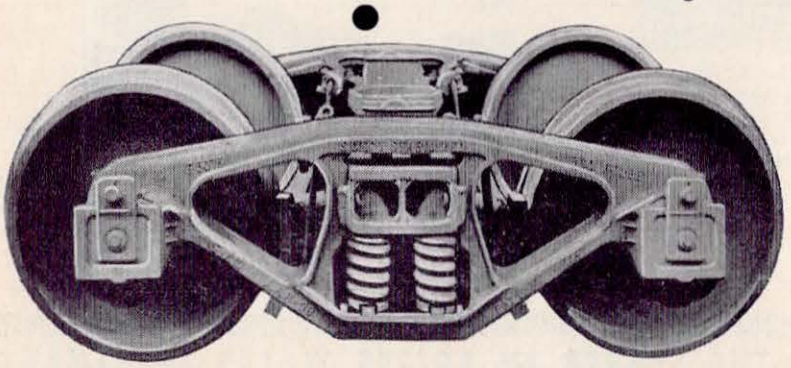
These cars embody the latest developments in car design and construction. Special appliances include easy-riding *Barber Stabilized Trucks* which have—

1. Variable friction to give best possible results under the variable loads encountered in service.
2. Long life with continuous top performance.
3. Simple and easy maintenance features.
4. A.A.R. interchange dimensions.



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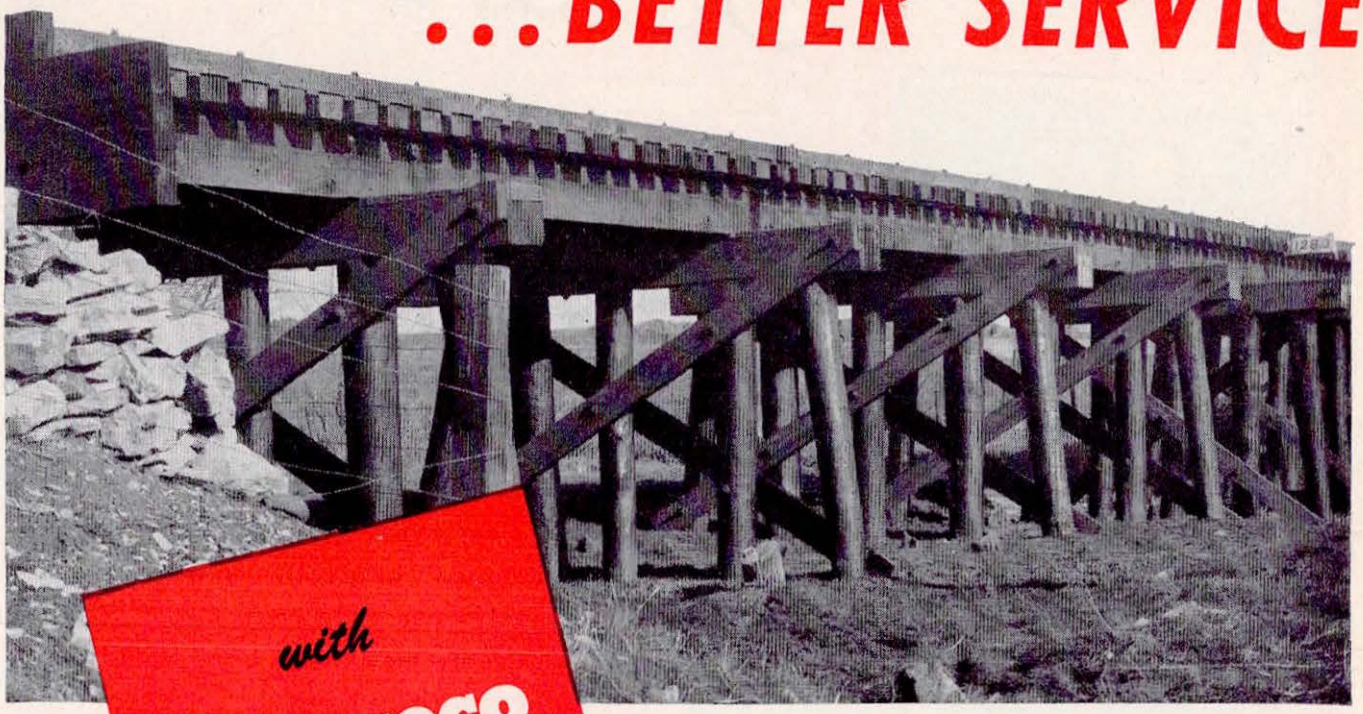

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AMCRECO Lowry Process CREOSOTED PRODUCTS

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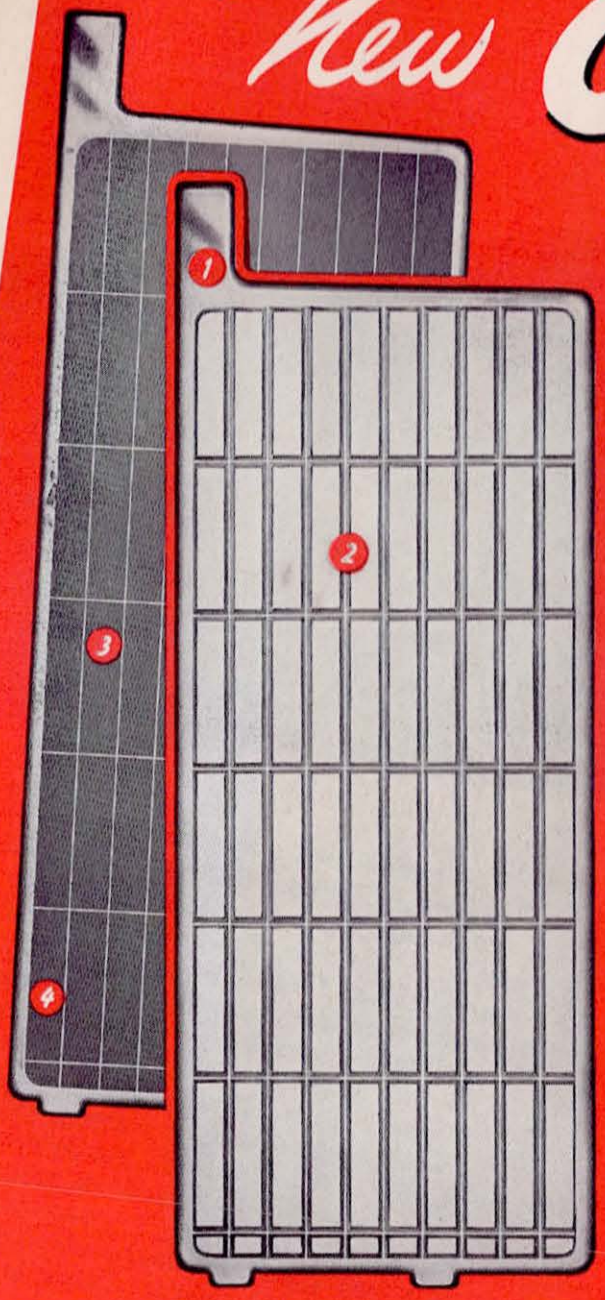
New GOULD "Z" Plate



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1. Solid, non-porous positive grid.
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4. More active material per battery pound.

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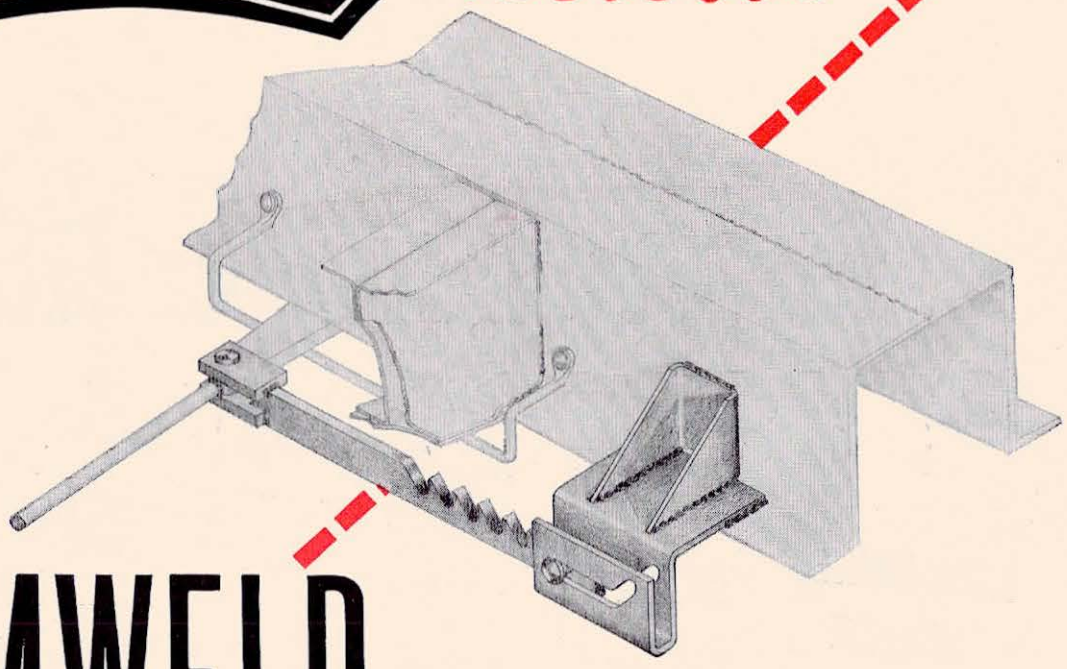

AMWELD BRAKE SLACK ADJUSTERS

AMWELD Slack Adjusters are in operation on these railroads:

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Cudahy Car Lines
Erie Railroad Co.
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Union Railway Co.
Virginian Railway
Wheeling and Lake Erie R.R.
Baltimore & Ohio R.R.
Delaware and Hudson R.R.
Interstate Railroad Co.
Southern Railway System
General Chemical Division (Allied Chemical & Dye Corp.)
Cities Service Oil Co.
Western Maryland R.R.
Delcware, Lackawanna & Western R.R.
Chicago, Rock Island and Pacific R.R.

. . . and orders have been received from:

Central Railroad Co. of N.J.
Duluth, South Shore & Atlantic R.R.
Escanaba & Lake Superior R.R.
Nashville, Chattanooga & St. Louis R.R.
St. Louis-San Francisco R.R.
Shippers' Car Line Corp.
Mexican Petroleum Corp.

The Nashville, Chattanooga and St. Louis Railway is applying 1,000 AMWELD Brake Slack Adjusters, Type "B-2" to 500 hopper cars and 500 gondolas being built by the Pullman Standard Car Mfg. Company.

This order is another example of the growing acceptance of AMWELD Brake Slack Adjusters.

AMWELD Brake Slack Adjusters are in operation on many railroads, some of which are listed. Three models, "T", "B", and "C" . . . AMWELDS are adaptable and easily installed on most types of freight cars.

Your request for information regarding AMWELD Brake Slack Adjusters will bring complete data including typical application prints. A representative will be glad to call if you say the word!

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ZINC CHLORIDE	—	—	174
CZC	233	285	—
COPPERIZED CZC	279	519	—

*Based on 85.5 months' exposure. All figures merely express a relationship between treatments and untreated control.

THANKS TO an improved preservative formulation, Copperized Chromated Zinc Chloride, you can count on greater service life from salt-treated wood.

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While adding extra years of service, this new preservative retains all the outstanding advantages of CZC. It is decay resistant, termite repellent, clean, odorless and paintable. There is no loss of strength in wood treated with Copperized CZC.

You'll add years of service to car lumber, platforms, roof decking and other installations, by using wood pressure-treated with this new COPPERIZED CZC. It's a worthwhile investment . . . investigate it today.

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KOPPERS PRESSURE-TREATED WOOD

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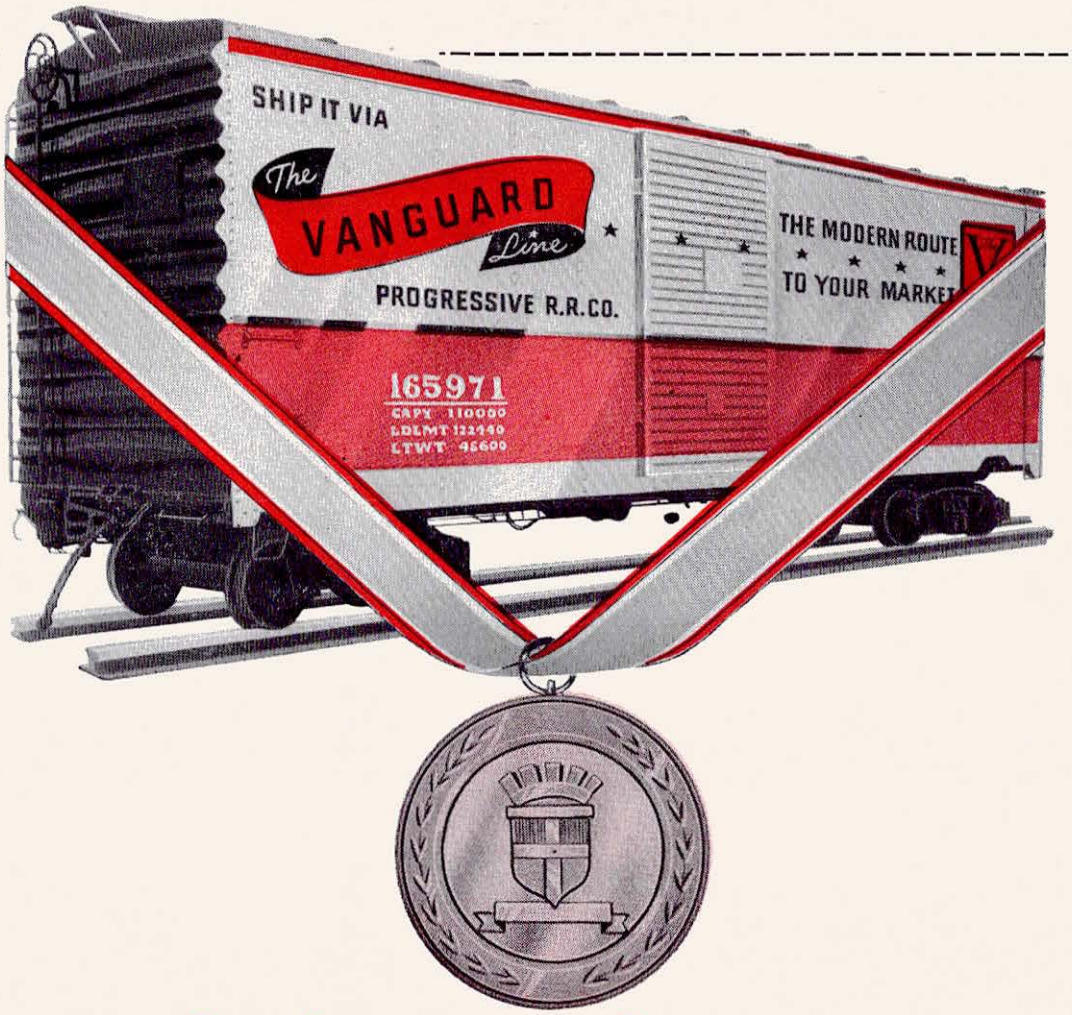

...and a lot more!

There's increased emphasis these days on the *appearance* of freight equipment. Railroad men who understand the value of good public relations also understand that in many parts of the country freight cars are their chief means not only of displaying their company name . . . but of reflecting the sound, progressive management back of it.

As a result, more and more rolling stock goes forth today smartly attired . . . instantly recognized . . . in tough, durable Du Pont DULUX Railroad Finishes. And this choice of DULUX pays off . . . in unusually high initial gloss that *holds* despite smoke, fumes, cinders, hard knocks, and weathering. Pays off in a wide range of lasting colors that mean less frequent repainting. Pays off in the approving glances of *millions* of interested eyes! E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

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**Includes Class 1 lines operating 100 or more passenger train cars.*

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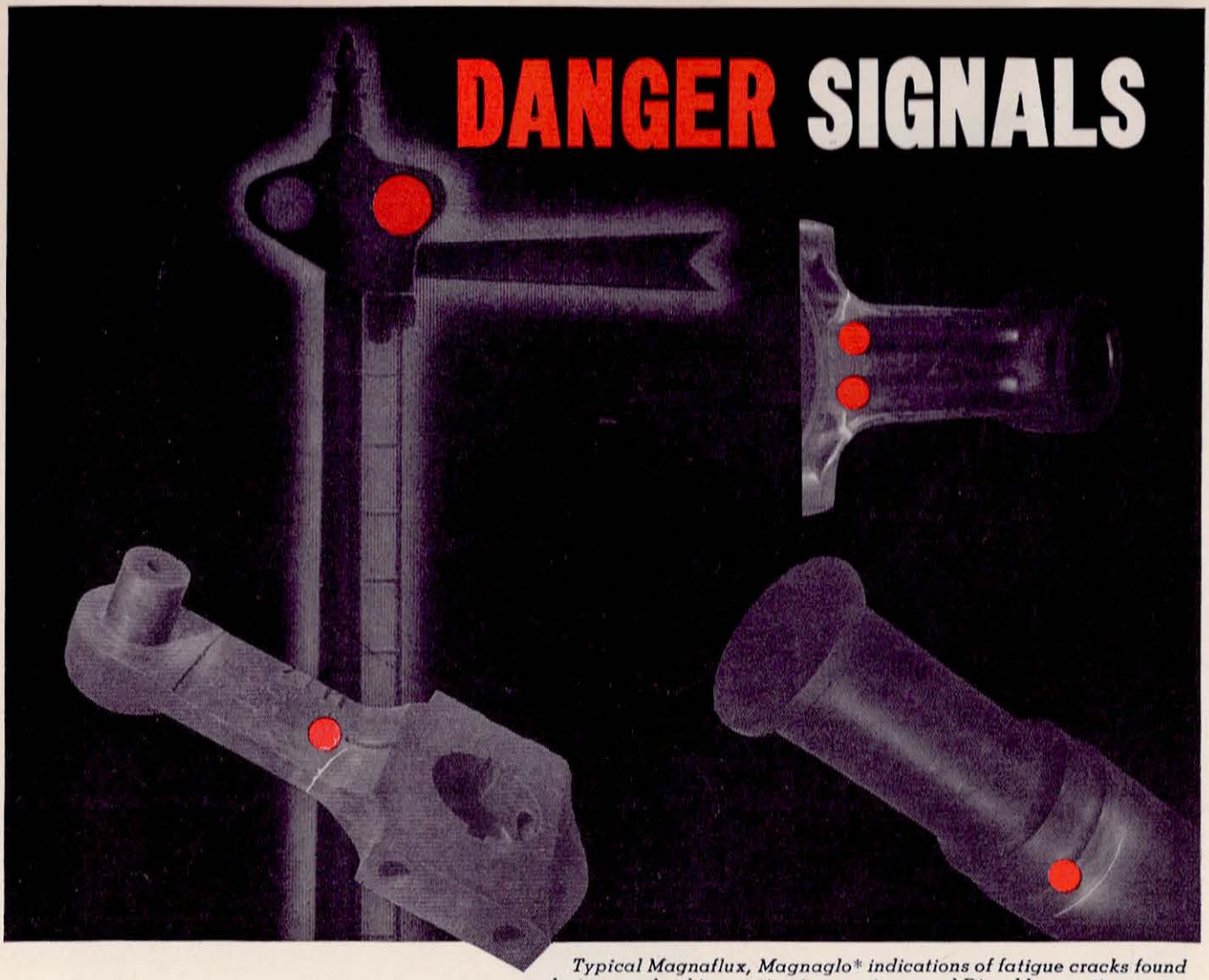

Typical Magnaflux, Magnaglo indications of fatigue cracks found during overhaul inspection in car, steam and Diesel locomotive parts.*

In Car, Steam and Diesel Shops

In railroading the principle of *setting up warnings in time to avoid trouble* is mandatory. In inspection, danger signals are equally necessary.

Magnaflux indications are positive signals showing the presence of dangerous invisible fatigue cracks, defects or other discontinuities. Magnaflux is non-destructive, fast and accurate with its *advance warning* of impending failure.

That is why so many railroads are using Magnaflux in car, steam locomotive and Diesel shops during maintenance or overhaul.

Maintenance officials know they can depend on Magnaflux to see danger signals first...for efficient, positive inspection that insures greater availability for *all* rolling stock. Write today for full particulars.

Specially trained engineers are maintained in the field by Magnaflux Corporation. These engineers call at the railroad shops from time to time as a matter of service routine to help with operations, results secured and special problems. This field service provides a constant check on the techniques of the operator and assures good inspection procedure.

**Magnaflux, Magnaglo, trademarks of the Magnaflux Corporation applied to equipment and materials for use with magnetic particle and fluorescent magnetic particle inspection methods.*

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Send for this booklet for additional information on Lamson "Railroad Engineered" Fasteners.

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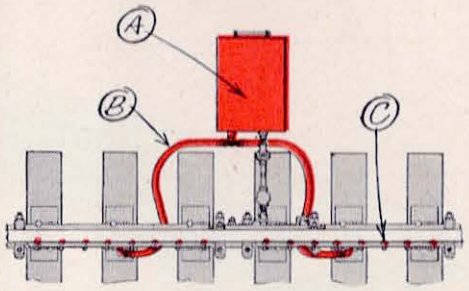
COTTER PINS

NUTS: HEX AND SQUARE

STANDARD ENGINEER'S CASE FILE

Case 1141—Reducing Wear on Rails at Curves



AUTOMATIC RAIL AND FLANGE LUBRICATOR

Car and engine wheels carried Calol Rail and Flange Lubricant and lubricated rails for a distance of more than two miles from an automatic lubricator. Calol Rail and Flange Lubricant is made from a highly water-resistant base and special lubricating graphite.

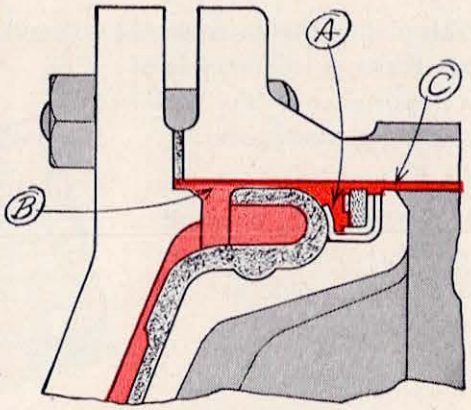
A. Very stable in use and storage — will not separate in any climate along U.S. railroads . . . will not wash off rails or flanges.

B. Pumps freely from lubricator — suitable for use in temperatures from below zero F. to over 160 degrees above.

C. Forms and retains "button" formation on wiping bar.

Calol Rail and Flange Lubricant has a "short" non-stringy texture. This keeps it on flanges and the sides of rails and minimizes the usual tendency of grease to pull over the tops of rails.

Case 1157—Maintaining Good Air-Brake Lubrication



SECTION OF BRAKE CYLINDER AND PISTON LUBRICATOR

Equaling or exceeding all specifications of the A.A.R., Calol Brake Cylinder Lubricant provided good lubrication in both freight and passenger brake cylinders for periods exceeding the usual three years. Recommended for the older K-type brake as well as the AB freight brake and HSC passenger brake.

A. Resists deterioration or separation — small quantity maintains complete coverage of cylinder . . . keeps lubricator swab saturated and pliable.

B. Minimizes swelling or deterioration of packing cup and helps to form tight seal.

C. Provides tough lubrication film that will not ball or roll from cylinder walls.

Calol Brake Cylinder Lubricant contains more than 82% highly refined and specially selected mineral oil, and complies with A.A.R. Specifications M-914-42.

For additional information and the name of your nearest Distributor, write

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Standard Oil Company of Texas
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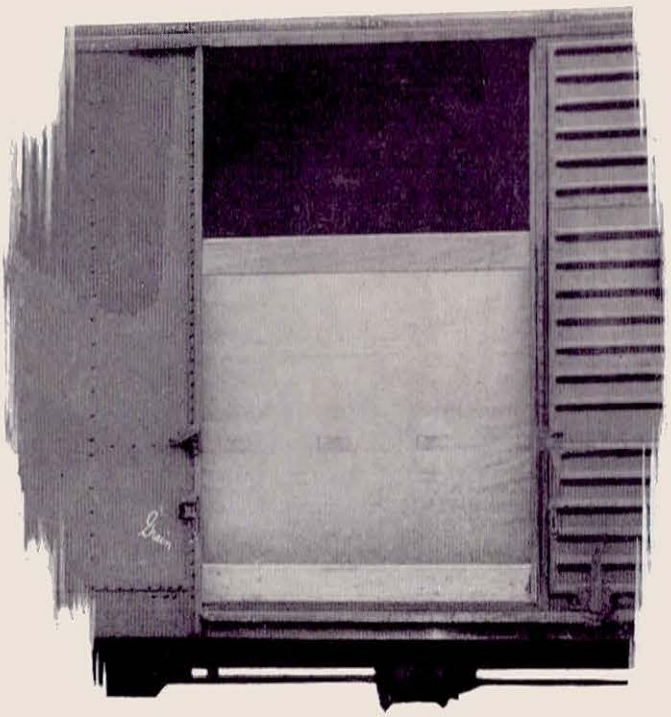
"ONLY ONE DOOR NEEDED TO PROPERLY BLOCK A DOORWAY"



"STEEL STRAP STRONG"

"SIZED RIGHT FOR GRAIN OR SAND OR THE COMMODITY SHIPPED"

"TRAVELS CHEAP NEEDS NO RETURN TICKET —EXPENDABLE"

New 6 years ago...Proved today!

benefits carriers, shippers and receivers alike!

Made of strong Signode steel strapping, scientifically spaced between laminations of heavy duty, water-repellent kraft liner board (A.A.R. approved, Pamphlet 36), Signode Retaining Doors are supplied in 3 ft. and 6 ft. heights . . . Signode Grain Doors in 6 ft. heights.

FEATURES:

1. **one-piece door**—no waste materials.
2. **lightweight**—6 ft. height weighs only 14 lbs. Easy to handle.
3. **easily applied**—only hammer and nails required.
4. **low cost**—savings in material and installation costs as well as dunnage.
5. **positive protection**—load pressure seals sides and bottom flap; prevents loss of grain or other commodities; reduces claims.
6. **nailing**—use of double-head nails permits quick removal of doors with minimum damage to cardoor posts.
7. **saves storage space**—twenty-five 6 ft. doors, for example, are packed in a crate 7½ ft. x 2½ ft. x 5 in. This is more than enough to cooper 12 freight cars!

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SIGNODE STEEL STRAPPING CO.
Railroad Sales Division
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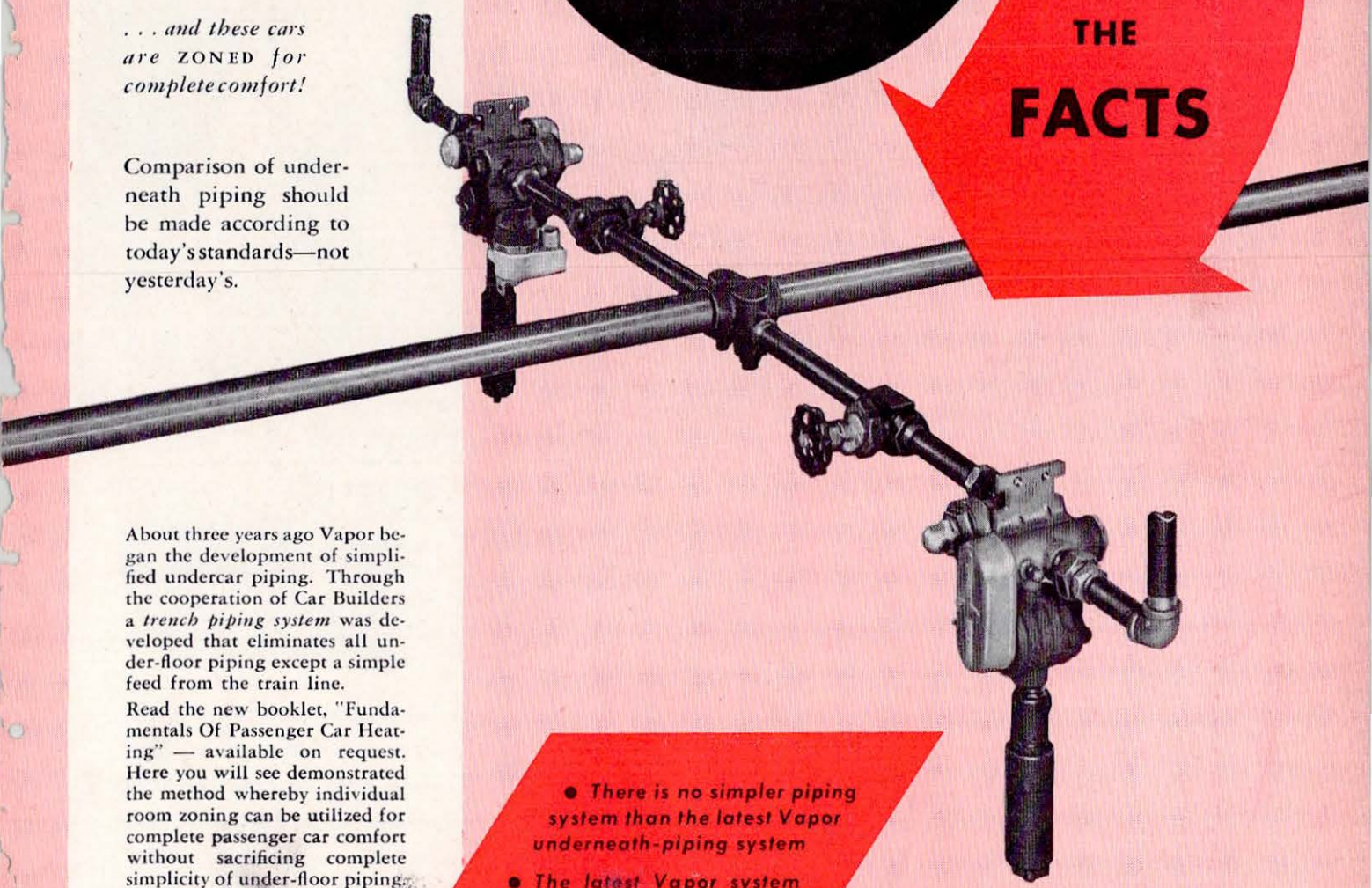
WHEN YOU HAVE THE FACTS

And there's no mystery about American Railroads' reasons for selecting Vapor heating.

Here is the latest Vapor underneath piping installed in the newest cars now being delivered . . .

. . . and these cars are ZONED *for complete comfort!*

Comparison of underneath piping should be made according to today's standards—not yesterday's.



About three years ago Vapor began the development of simplified undercar piping. Through the cooperation of Car Builders a *trench piping system* was developed that eliminates all under-floor piping except a simple feed from the train line.

Read the new booklet, "Fundamentals Of Passenger Car Heating" — available on request. Here you will see demonstrated the method whereby individual room zoning can be utilized for complete passenger car comfort without sacrificing complete simplicity of under-floor piping.

- *There is no simpler piping system than the latest Vapor underneath-piping system*
- *The latest Vapor system permits zoning for complete comfort when required without additional underneath piping*
- *Vapor system heats the last car on the longest trains with the same efficiency and economy as the first car.*

There are no pumps, no intermediate anti-freeze liquid, no layover problem in the simple unit radiation Vapor steam heating system.

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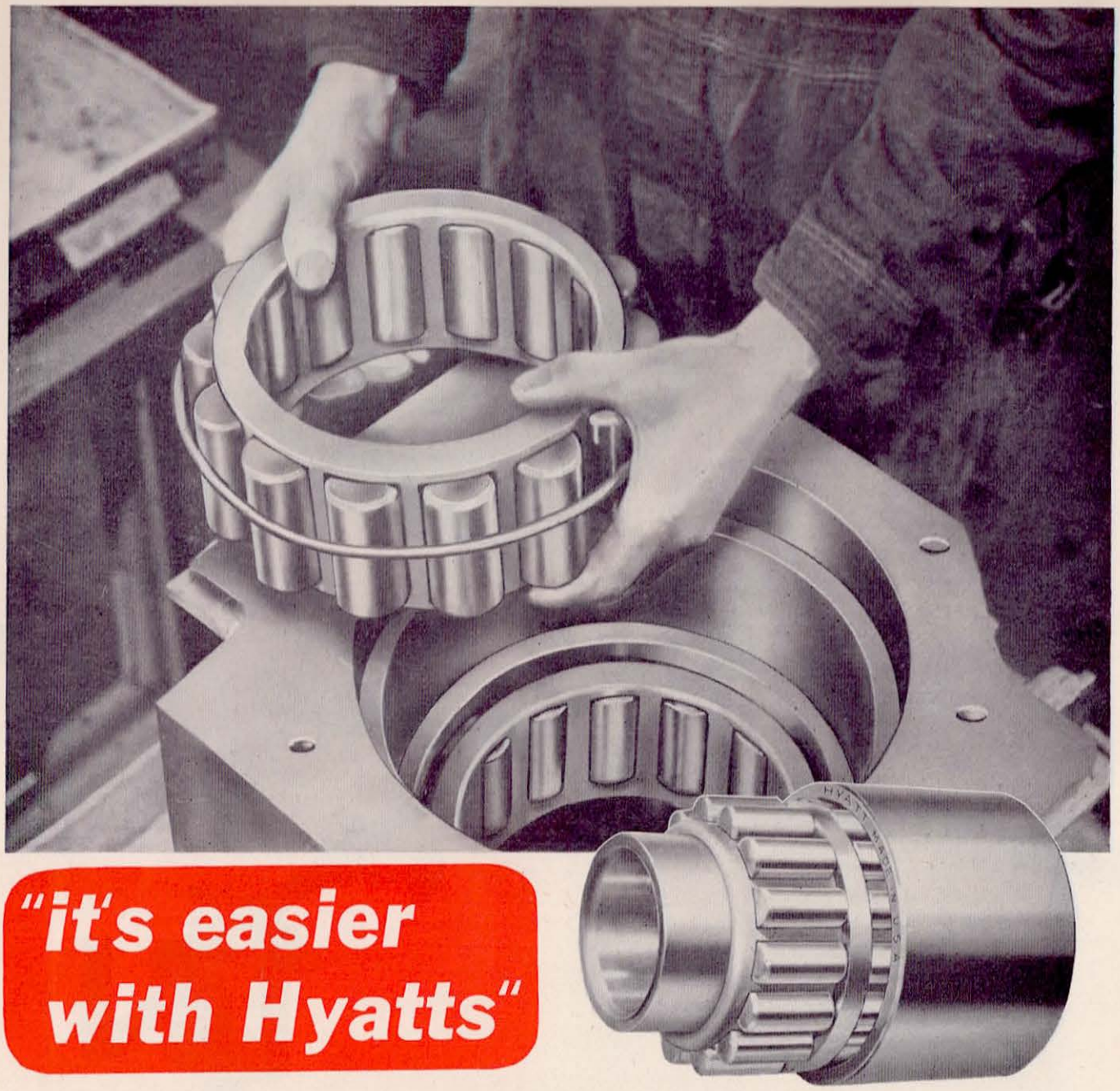

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Just a quick look at the size of the rollers in a roller assembly as it is lifted from a Hyatt Journal Box should convince you of the long life and rugged dependability that is built into these preferred boxes.

Extra stamina, extra strength, extra safety, and the ultimate in simplicity makes Hyatts the choice of forward looking railroad men.

Here is a journal box so simple that it can be removed and dismantled by hand, so easy to maintain that shop men vote for it every time, so smooth in operation that passengers notice the difference, and so easy on your maintenance budget that more and more railroad men agree that "It's easier with Hyatts."

For more complete information about Hyatt Roller Bearing Journal Boxes write to Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARING JOURNAL BOXES

Vol. 127, No. 2 July 9, 1949

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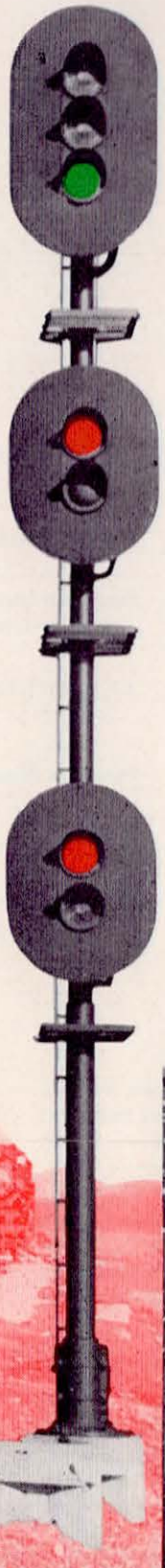
For Maximum Utilization of Track and Rolling Equipment



"Union" Centralized Traffic Control is one sure way to increase your track capacity and the availability of rolling equipment—and, at the same time, to achieve those faster train schedules, which will attract both freight and passenger patrons.

"Union" C.T.C. is a modern method of train operation that eliminates the "red tape" of written train orders. Train movements over an entire division can be closely regulated from a single point such as division headquarters. Neither distance of control point from the controlled territory, nor number of functions controlled, are factors in its efficiency. With complete information and control centered at one location, delays for train meets are effectively reduced. By keeping trains moving, C.T.C. gets them to destinations faster. By getting them to destinations faster, both track and rolling equipment are made available for extra duty—and the latter can roll up more train miles in a given period.

Hundreds of "Union" Centralized Traffic Control installations bear out the fact that "Union" C.T.C. saves your railroad more than it costs. Write any of our district sales offices for complete information—or, better yet, let our representative discuss with yours how C.T.C. can best serve your railroad.

"UNION"

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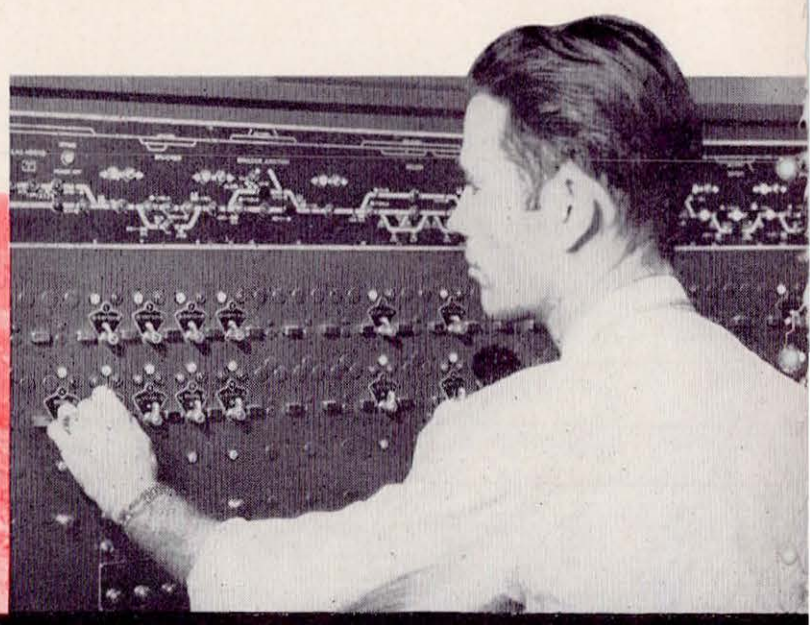
SAVES YOUR RAILROAD MORE THAN IT COSTS



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WEEK AT A GLANCE

CONVENTION REPORTS: With both the Mechanical and Purchases and Stores Divisions of the Association of American Railroads in annual convention last week at Chicago, this week's issue is principally devoted to reports of those two conventions. The account of the Mechanical Division sessions begins on page 98; that of the P. & S. Division meeting on page 119.

MECHANICAL MEN DISCUSS 40-HOUR WEEK: As might be expected, with inauguration of the 40-hour week less than two months away, the drastic changes which it will necessitate in mechanical department operations were a leading subject of discussion at the Mechanical Division meeting; two of the major addresses concerning it have already been abstracted in *Railway Age*. It was by no means, however, the only topic considered; the others, brought up either in speeches or in committee reports, are covered in our account of the convention.

BETTER BOX CAR SITUATION: As the time of year approaches when a seasonal increase in car loadings normally occurs, the box car supply is better than at any time since before the war. So says Arthur H. Gass, chairman of the A.A.R.'s Car Service Division, in his latest monthly review of the national transportation system. His comments on that and other matters are summarized in the News.

HIGHWAY SANTA CLAUS: Bigger and costlier highways for trucks to destroy would be the result if Congress should adopt in full a Public Roads Administration report recommending the expenditure, over the next 20 years, of *$11¼ billion*. That's a lot of money under any circumstances, but it's an astronomical sum considering that it is proposed to spend it on less than 40,000 mi. of road, for the benefit of only 20 per cent of the country's highway traffic—and that it would be in addition to all other present highway expenditures.

STILL IN THE MARKET: Despite a comparative decline in April, total railroad buying of materials and supplies in the first four months of 1949 was larger—except as to fuel and equipment—than corresponding buying in the first third of 1948. The detailed figures on purchases, through April, and on April inventories, are shown in our monthly summary, which appears on pages 96 and 97. Incidentally, as reported in the News, the Railway Business Association, members of which supply so many of the railroads' material requirements, has asked the Interstate Commerce Commission for permission to intervene in the so-called reparations cases. Thus, the railroad suppliers aline themselves with railroad shippers, employees and security owners in opposition to the Justice Department's thinly disguised plot to bankrupt the railroad industry.

PROTECTING THE MIDDLE CLASS: Some months ago *Railway Age* published an editorial entitled "Liquidating the Middle Class"—an editorial widely quoted and favorably commented on by newspapers in all parts of the country. The gist of that editorial was that socialistic policies being vigorously advocated by certain government officials, politicians and labor leaders would inevitably result in eventual "liquidation" of the great American "middle class"—just as surely as, if somewhat less brutally than, the corresponding class in Russia has been liquidated by the Communists. But recent events in Washington—particularly the failure of the intensive drive to repeal the Taft-Hartley Act—show that the middle class, even though still unorganized for political or economic action, does have some power to protect itself. The implications of those recent events are the topic of this week's leading editorial.

IT CAN'T BE DONE: No matter what its proponents say, the proposed St. Lawrence seaway can't be made self-liquidating on the basis of tolls levied on traffic which might use it. That is the conclusion reached in an analysis of Commerce Department estimates, made by a committee headed by Walter J. Kelly, A.A.R. traffic officer, and reviewed in detail in the News section.

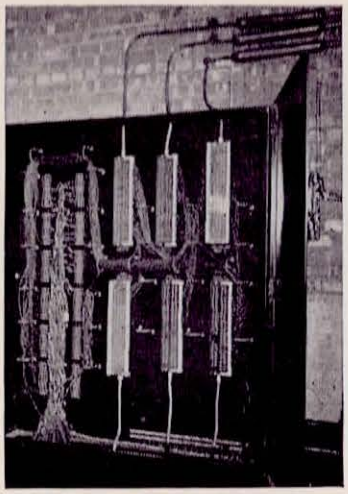
MANY SUBJECTS ENGAGE P. & S. MEN: The 40-hour week was also, naturally enough, a topic of discussion at the Purchases and Stores convention. But other topics came up there, too—the necessity of keeping inventories down to reasonable size; the value of modern methods of materials handling; the Diesel fuel and freight claim problems, and many others. Taken together, they point to a tough year ahead for railroad purchasing agents and storekeepers.

CONTINUOUS RAIL IN CASCADE TUNNEL: To reduce maintenance costs and provide smoother riding track, the Great Northern is spending $189,000 to install continuous welded rail in its 7.79-mi. Cascade tunnel. How the work is being done, with Oxweld equipment, is described in detail in an illustrated article which begins on page 92.

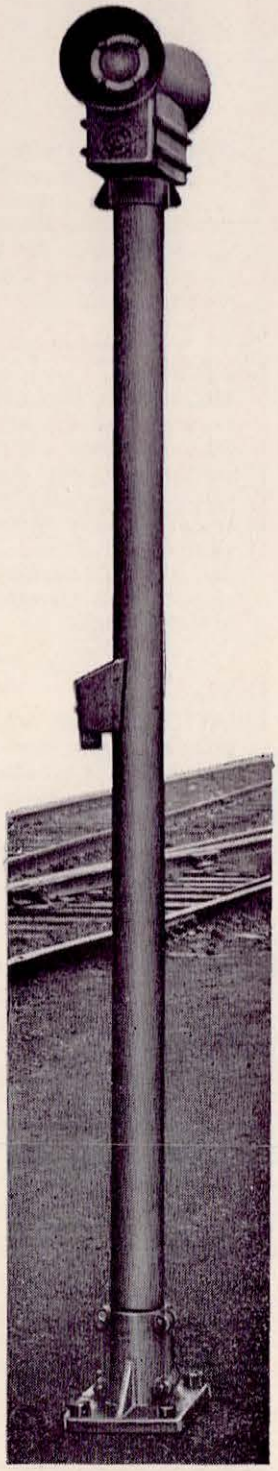
I. C. C. CHANGES REQUEST: As one of our leading News articles reveals, the Interstate Commerce Commission seems to have modified, at least in part, its attitude toward pending bills (S.238—H.R.378) to broaden Section 25 of the Interstate Commerce Act. The commission, apparently, still wants authority over railroad operating rules, but would obtain that by "another bill," keeping Section 25 as "a device section." The modified proposal would still, however, authorize the commission to prescribe operating rules under Section 25 in connection with signaling and communications installations.

OVER 37 MILES OF OKONITE UNDERGROUND CABLE
used in
COUNTRY'S LARGEST YARD LOUDSPEAKER SYSTEM

Yardmaster at loudspeaker control panel in one of the two communication towers.



Cable terminal box in base of same communication tower.



2-way talk-back loudspeaker on 8-foot mast in yard.

New B&O Barr Yard Near Chicago

MODERN COMMUNICATION facilities are an outstanding feature of the Baltimore & Ohio's new Barr Yard at Riverdale, Illinois, near Chicago. These money-saving facilities include a network linking 197 2-way talk-back loudspeakers and 50 paging speakers for directing switching crews from two communication towers; complete telephone and printing telegraph service; and an independent intercommunicating system between offices in the yard. Over thirty-seven miles of Okonite underground cables were used on this installation — 188,000 feet of Okovox-Okoprene Cable and 25,000 feet of Okolatex-Okoprene Cable, both types steel-tape armored.

Chief among many reasons for choice of Okonite underground cables in railroad installations are superior rubber insulation, and all-around durability. Okoprene sheaths, for example, are chemically resistant to alkalies and other corrosive substances encountered in direct-burial in ground or cinders, or where exposed to sulphuric acid fumes in soft coal smoke. Railroad men have found that Okoprene — the pioneer neoprene sheath — also withstands oil, heat, cold, sunlight, flame and weather conditions that hasten destruction of fibrous-covered insulated cables.

When your railroad cable specifications include Okonite insulations and protective sheaths, you are sure of obtaining long, trouble-free circuit life — the only true measure of cable economy. For with today's high installation costs, the best cable is your best policy. To get detailed information on how these cables may fit your needs, we suggest you consult your Okonite representative—or write to The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

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MIDDLE CLASS CAN STILL DOMINATE

What has occurred in the 81st Congress has proved that the liquidation of the middle class by socialistic policies can be stopped and indicated that it probably will be. The Truman branch of the Democratic party credited the labor unions with its success at the last election. Truman in his campaign promised the labor union leaders for their support the repeal of the Taft-Hartley Act, socialized housing, socialized medicine and numerous other socialistic policies which would have had the purpose and effect of "robbing selected Peter (the middle class) to pay for collective Paul" (manual workers).

The Taft-Hartley Issue

The issue presented by the Taft-Hartley Act was especially important because, first, its repeal would have shown that the labor union leaders were dominant in the federal government, and, second, it would have restored to the labor union leaders the power to intimidate and coerce business and the people that they had under the Wagner Act which the Taft-Hartley Act repealed. And the nation had reason to fear not only the labor union vote and the socialistic legislation that might be adopted by politicians elected by it, but also the nation-wide strikes and violence to which labor union leaders had shown that, unless restrained by law, they would resort to destroy efficient business management and business profits. And every means of whatever kind used to destroy efficient private management of business and to prevent the earning of the profits necessary to financing the expansion of private enterprise is a promoter of socialism.

Well, the drive of the labor union leaders and the Truman branch of the Democratic party to repeal the Taft-Hartley Act has proved a complete failure. It has been defeated by a coalition in Congress of Republicans and conservative (principally Southern) Democrats. But why has such a coalition been formed and made effective? Because those who have formed it and made it effective have been hearing from the great middle class back home. The labor unions have perhaps 16 million members. This gives them and their leaders great organized driving force. But there are about 60 million gainfully employed (or employable) persons in this country. Hence, the membership of labor unions is a minority of *only about one-fourth* of those who work, whether with hands or brains. And many members of labor unions are middle class in their ambitions, principles and ownership of property, and hence unsympathetic toward the desire of their union leaders to dominate the government and substitute socialism for private enterprise and private property.

The three-fourths of the nation's workers with hand or brain who do not belong to unions, plus many members of unions, have shown so plainly

that they do not want the "welfare (i.e., charity) state" offered them by the Truman socialist-democrats that virtually without organization they have beaten most of the socialistic legislation promoted by the organized power of the Truman Democrats and the labor unions.

Some Farmers Oppose Brannan Plan

A good illustration of the reaction of middle-class Americans to socialistic proposals when they really understand them is afforded by recent action of the American Farm Bureau Federation, the nation's most powerful farm organization. Secretary of Agriculture Brannan has proposed a plan designed to buy the votes of both farmers and manual workers. Under it the government would let farm prices decline to their natural level, thus reducing the cost of living of urban labor, but would at the same time subsidize farmers by guaranteeing them a "fair income" at the expense of the taxpayers. The farmers are not falling for this project to subsidize them and buy their votes. Directors of the American Farm Bureau Federation recently issued a statement denouncing the scheme, because, among other things, "its cost would be staggering," "there is no reason why the government should pay part of the grocery bill of every citizen," and "price goals of the program are so high as to make for certain continuous and rigid controls over production and marketing of agricultural commodities."

Some parts of the Truman "fair deal" socialistic program have been adopted, but most have been defeated. If the middle class, with virtually no organization, can exert so much more influence in Washington than the highly organized bloc promoting socialistic policies, what could not the middle class accomplish in protecting itself if it were as well organized for economic and political action under aggressive leadership as are those who are striving to liquidate it?

SHORT-SIGHTED ECONOMIES

That the railroads, to remain solvent, must tailor expenditures to income is basic and readily understandable, but this is no reason why an individual road, or the industry as a whole, should cut its cloth in a short-sighted, costly way.

Such characterizations can be applied with justice to a "feast-or-famine" policy of constantly fluctuating allotments for maintenance-of-way and structures work. Budgeting and planning of such work may be long-range operations, and usually are, but execution frequently is on a month-to-month, or even shorter, basis, and is only as *certain* as monthly earnings. There are railroads on which work programs are as sensitive to carloadings as a thermometer is to temperature, likely to be disrupted with the slightest slump, with apparent disregard for long-range consequences.

Surprisingly, this situation prevails even though the evil consequences are so real and apparent. One of these is the loss in efficiency of both men and machines that results where the man-hour curve is made to fluctuate with monthly earnings or prospective earnings. Unstable forces and wrecked work organizations are brought about by such a procedure, but a more serious result of coupling necessary work operations rigidly to the trend of earnings is curtailment of track work in periods of declining or low traffic, when it might be done with greater efficiency because there are fewer interruptions than in periods of rising or dense traffic.

These facts are certainly well known to every maintenance-of-way officer. Why, then, these instances of slavish adherence of the man-hour curve to traffic and earnings curves? Why the present unseasonable temporary lay-off of thousands of men in the maintenance-of-way department because of the current dip in traffic—when these men, particularly at this time of the year, might be employed with much greater efficiency than when traffic picks up? Of course, there are reasons—e.g., to produce the best possible monthly financial showing, and to maintain an arbitrary maintenance ratio—but are these reasons adequate, or fully justifiable in the light of the wastefully higher unit and overall costs entailed?

And is it possible that the railroads as a whole now plan to treat their basic engineering research program like some of them treat their track-work programs? — to juggle their carefully organized, highly trained and skilled research organization, only just getting in its stride, like an extra gang? There are disturbing indications that even this much-heralded, long-delayed program is to be curtailed, as a consequence of the recent traffic and revenue slump.

That such a drastic step is imperative, or even given consideration under present conditions, is incomprehensible. If it is considered, out of timidity or fear of the future, how can railroad employees, investors and the public generally be expected to have confidence in the railroads' future?

What of the unsolved problems that are daily costing the railroads hundreds of thousands of dollars, and that will continue to do so until they are solved? Should the railroads now curtail long-range research looking to the resolution of these problems and the consequent major economies? The crying need, on the contrary, is for a broadened scope of such research. It must be evident to everyone who has contact with railroading that, to survive present and future economic and competitive pressure, the railroads must find *new* ways of saving millions of dollars in operating and maintenance costs—and

without delay. Such ways assuredly can be found, but they will not be uncovered or developed by short-range, fear-inspired procedures that sacrifice the long-term interests of the industry to gain ephemeral ends, no matter how immediately attractive they may appear to be.

AN INVESTMENT QUICKLY AMORTIZED

About the only criticism that can be leveled at the highly interesting and informative recent meeting of the Association of American Railroads' Mechanical Division is for the lack of interest shown by those in attendance in the steam portion of the Locomotive Construction Report. It is difficult to understand how the millions of dollars involved in the operation and maintenance of steam power can be continually ignored, and it is still harder to justify this indifference. Statistics prove conclusively that, even assuming the continuance of present replacement ratios of Diesel-electric to steam locomotives and the continuance of Diesel purchases at last year's rate, it would take over a dozen years before the last steam locomotive was retired. Furthermore, extensive improvement and modernization programs for existing steam power can be shown by actual example to have completely repaid their cost in maintenance savings alone in less than three years.

Before the war, the average Diesel unit put into service replaced about two steam locomotives. For the year ended April 1, 1948, the replacement ratio dropped to 1.44. For the year ended April 1, 1949, it required 2,592 Diesel units to replace 2,669 steam locomotives, or a replacement ratio of 1.06. Logic points to a continued reduction in this ratio, probably to below unity, because (1) less advantage can be taken of the high availability inherent in Diesel power as the Diesel fleet grows and is assigned to less and less selective runs, and (2) later models of steam locomotives will be replaced as Dieselization progresses, and this more recently built steam power has greater hauling capacity as well as greater potential availability, both of which factors will tend to require more Diesel units to replace a given number of steam locomotives. It seems quite likely, therefore, that the ratio between steam locomotives retired and Diesel units put into service will continue to drop, and hence the theoretical time required to replace all steam power by Diesel power will be appreciably more than the dozen years at present replacement ratios.

As the steam locomotive will be an important factor in railroading for more than a decade at least, does it not make sense to take steps to improve its operation and to keep its maintenance to a minimum? Improvements to maintenance facilities or to steam locomotives, particularly the latter, need not take ten or twenty years to be amortized. The experience of the Chicago & North Western in modernizing a group of heavy 4-8-4's showed that the cost of modernization was repaid in *maintenance savings alone* in less than three years. Over and above this benefit, substantial savings in fuel and an increase in availability were realized.

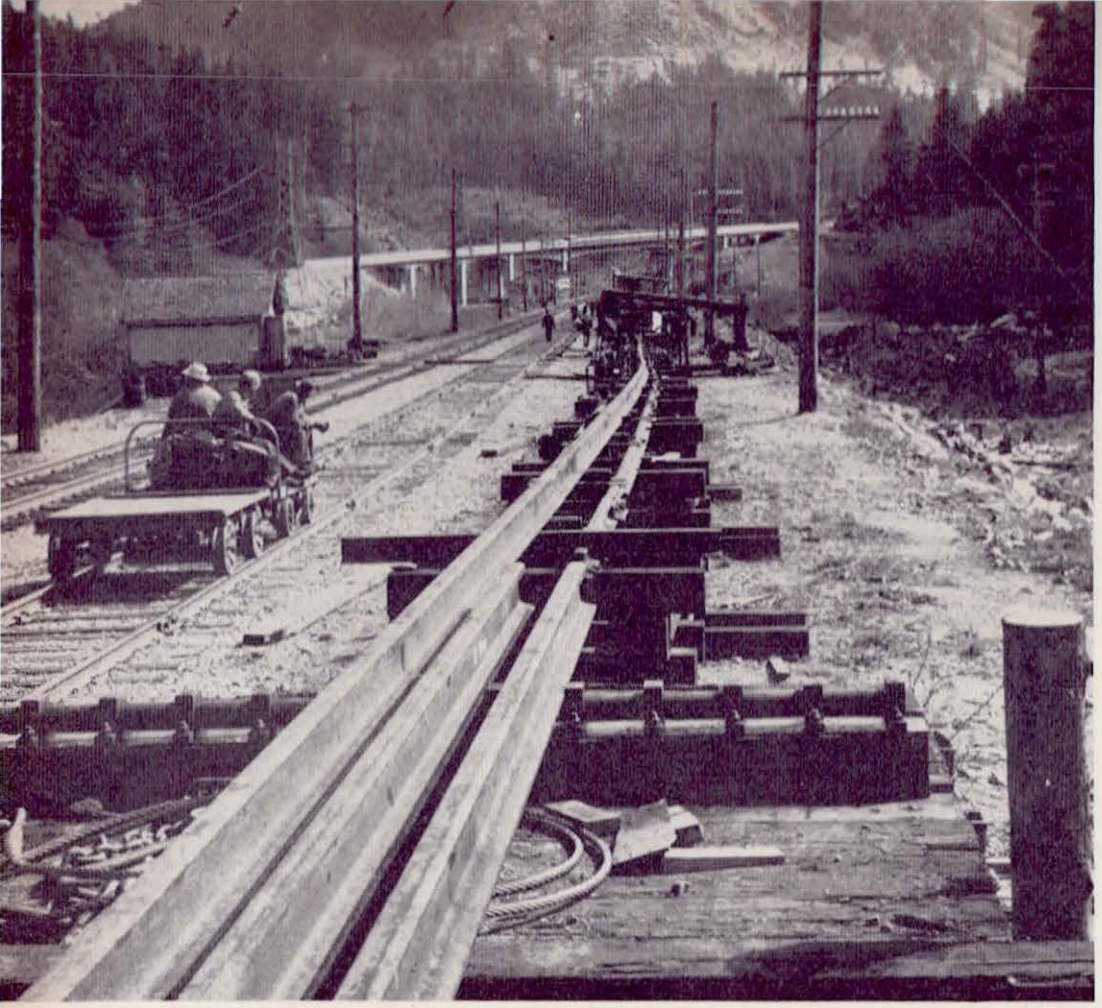
From the foregoing it can be easily seen that improvements to existing steam power can be amortized in far less time than the steam locomotive is going to be with us. Even these assumptions are based on a great deal more pessimistic outlook for steam power than is likely to be justified in reality, as there are many assignments where steam power may never be replaced by Diesels. Nonetheless, even assuming the worst possible future for the steam locomotive, it is still clear that by devoting a little thought and a little money to improving the steam locomotive, the quality of operation can be improved and the cost reduced.

THE PRICE OF "SECURITY"

Moscow was not the discoverer of our Achilles heel; but it has learned quickly how to exploit our vulnerability. It has walled off from the world the horrible example of its own peoples' "security" and insulated its own people from knowledge of ours. Thus protected from too obvious absurdity, it daily inspires unwitting stooges in our land to call continually for more and more gifts from government. By adroit false statements, it has drawn us into a strange competition. A competition which leads us to try to offer, not what Russia offers its people, but what it pretends to our people that it offers its people. By every insidious device it seeks to build up the idea that government is something more than the people it serves, that government can give material security and that government owes material security to each citizen.

No great powers of penetrative imagination are needed to see the end that Moscow seeks. Such ideas, planted in the fertile soil of human weakness and watered by the political tears of office seekers, contributed free of charge and free of knowledge, grow very strong. They result in demands for government action and spending and taxation. With proper husbandry, such ideas can so overgrow the machinery of our production as to clog it to a halt. What could provide an easier or more oriental method for destroying an opponent by inches?

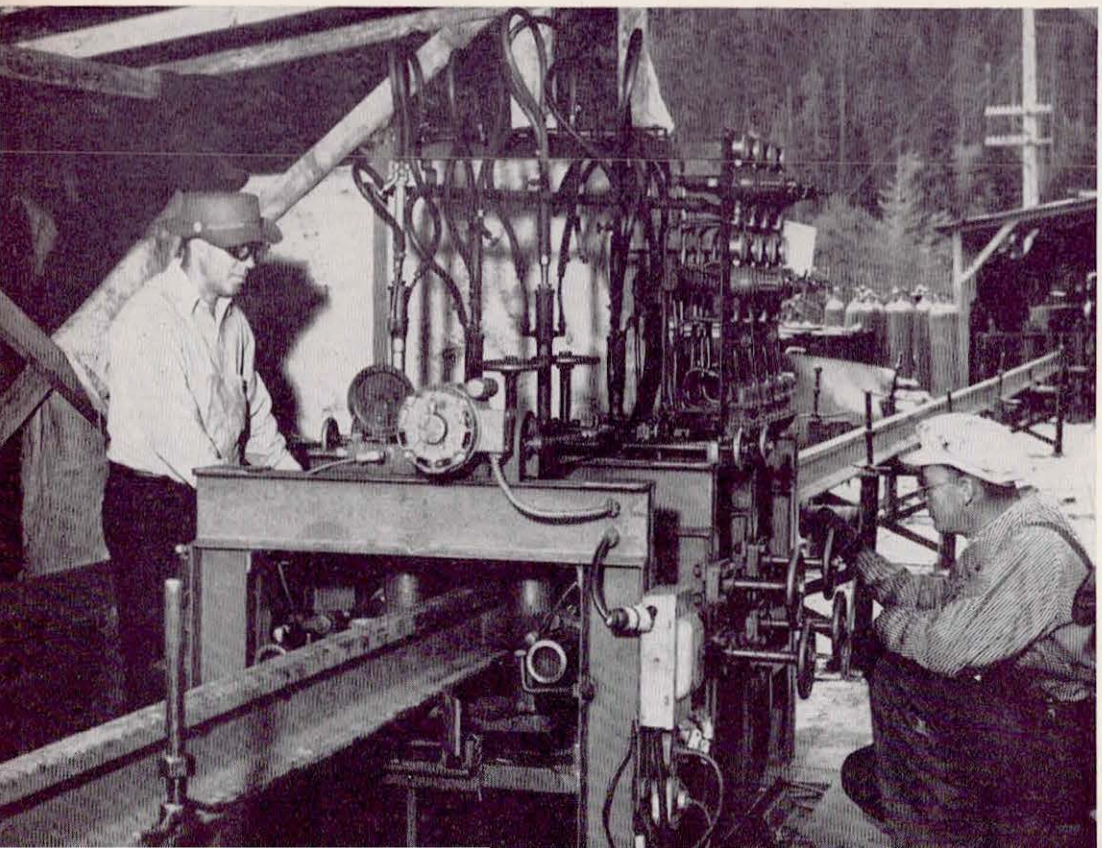
—Francis Adams Truslow, president of the New York Curb Exchange



A quarter-mile length of welded rail being loaded on a string of 25 roller-equipped flat cars. The cars are standing on a 2.2-per cent grade

CONTINUOUS RAIL FOR CASCADE TUNNEL

Pressure-welded quarter-mile lengths, later joined by closure welds, are being laid in America's longest bore



In this Oxweld machine the rail ends are welded together under a temperature of about 2,300 deg. and a pressure of 2,500 to 2,700 lb. per sq. in. Each weld is completed in about five minutes

This month, at a cost of about $189,000, the Great Northern will wind up the biggest continuous-rail project yet undertaken in the Pacific Northwest—the installation of four track miles of new 115-lb. pressure-welded rail in its 7.79-mi. Cascade tunnel, 98 mi. east of Seattle, Wash. Using a pressure-welding machine leased from the Oxweld Railroad Service Company, the road is fabricating standard 39-ft. rails into 1,326-ft. lengths at Scenic, Wash., near the west portal of the tunnel, transporting the long rails through the tunnel, three at a time, on roller-equipped flat cars, and relaying them westward from the east portal at Berne, Wash. The closure joints between the long rails are being hand welded.

"Assembly-Line" Setup

The rail being replaced is 110-lb. material, rolled in 1928, which was laid when the tunnel was constructed 20 years ago. The relay work was undertaken to obtain smoother riding track in the tunnel, and to reduce maintenance costs. The road expects to install welded rail in the remainder of the tunnel next year.

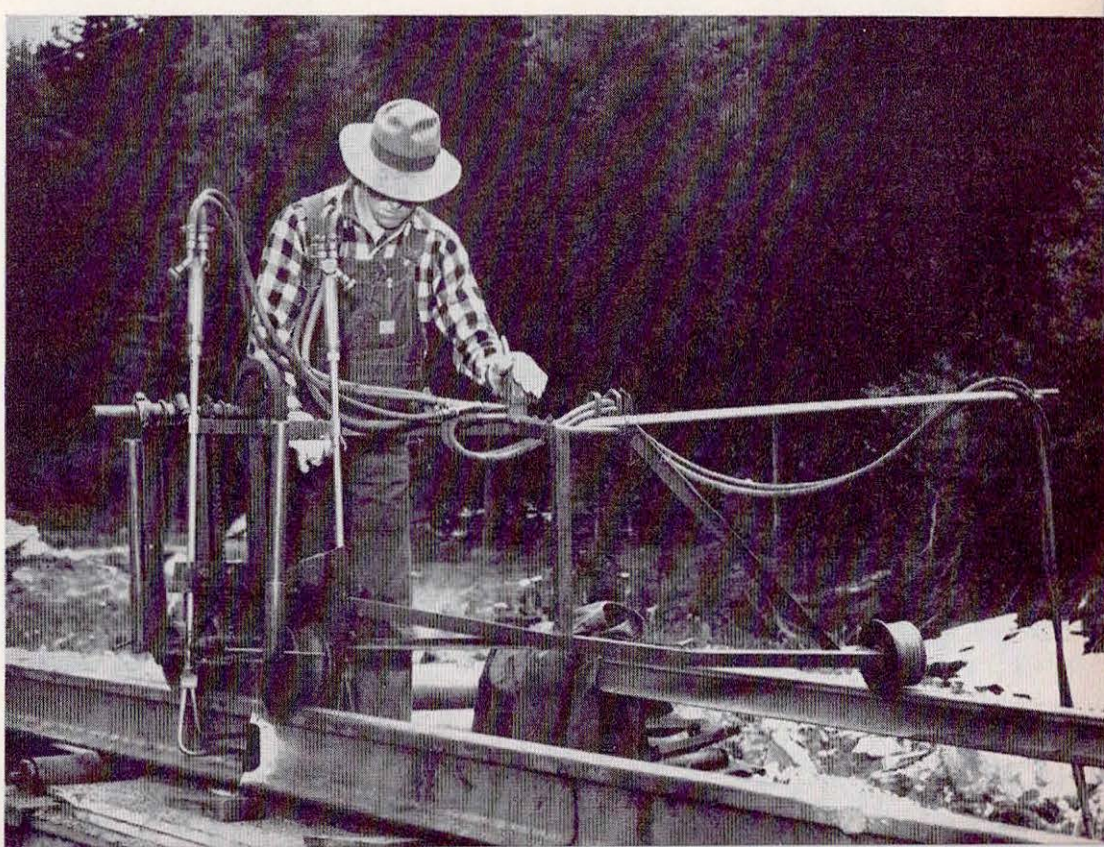
The welding equipment is located about ½ mi. west of the west portal of the tunnel. As in the usual Oxweld "assembly-line" setup, the welding plant includes, in order, a rail saw by means of which the ends of the 39-ft. rails are squared up and smoothed; the pressure-welding machine; a station where excess metal is trimmed from the weld by an oxyacetylene torch; the normalizer, where the weld is reheated to relieve stresses produced in the metal by the welding operation; the first two of a series of three grinding and polishing machines; a power winch which utilizes a rail clamp and steel cable to move the welded rail along the assembly line; and the final grinding station where the welds are polished. After polishing, each weld is tested by the Magnaflux process to detect possible hidden flaws. The entire surface of the rail, except the running surface of the ball and the underside of the base, is then flame cleaned to loosen mill scale, brush cleaned, and given two coats of corrosion-resistant paint.

The flat cars (25 of them) on which the long rails are transported are each equipped with sufficient individual rollers to handle 12 rails abreast. So far, however, only three rails have been moved at one time because of the limitations imposed on the work by train movements in the single-track tunnel. For the first rails laid—at the east portal of the tunnel—the haul was about 8½ mi. As the relaying progresses westward, the length of the haul, of course, diminishes. In unloading one of the quarter-mile lengths of rail, a clamp is first attached to the rail end and secured to the track by a steel cable and rail shackle. The string of flat cars is then slowly pulled from underneath the rail.

How the Rails Are Laid

In carrying out the relay work the old rail is disconnected, using a power wrench, the inside spikes are withdrawn, the old rail is thrown out to the side by lining bars, the new rail is lined into place, and the inside spikes are reset. The tie plates were renewed prior to the relay work, and it was found that, because of the remarkably good condition of the tie-plate seats, no tie adzing was necessary. All that was required was to clean away dirt, grease and other foreign material before placing the new plates.

When two consecutive long rails have been laid and it is necessary to close up for the passage of trains before the joint can be hand welded, angle bars are temporarily secured to the joint by special clamps. In making temporary closures of the new rail with the old, the old



The entire surface of each welded rail, except the running surface of the ball and the underside of the base, is flame cleaned to remove mill scale and then is given two coats of corrosion-resistant paint

After three long rails have been loaded on the cars, they are fastened at intervals by clamps to prevent lateral shifting during movement of the cars

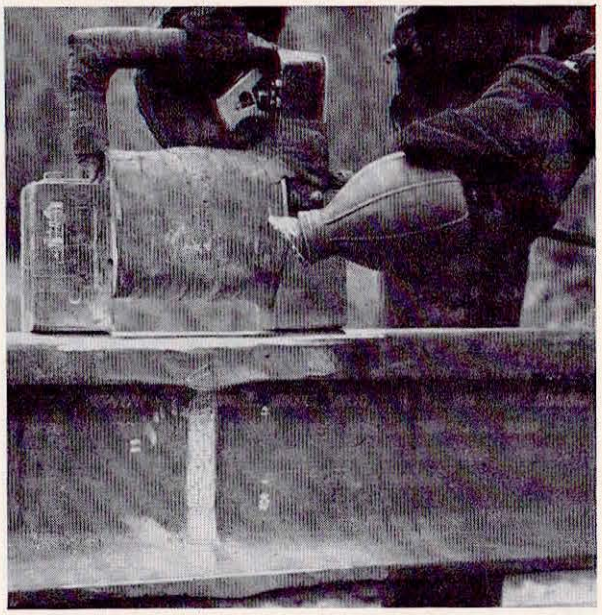
Loaded flat cars moving past the Great Northern's station at Scenic en route to the tunnel a short distance away. The electric locomotive pushing the cars is around the curve in the distance

To unload a rail the flat cars are slowly pulled from underneath it after the rail end has been secured to the track by a steel cable, as shown here

rail is cut with a power saw and the remaining length is turned end for end. By so doing both the joint of the old rail with the new and the next joint of the old rail can be secured by angle bars bolted at one end, and no rail drilling is necessary. In the entire four miles of relay territory there are only four insulated joints. At these locations the new rail will be cut by a power saw, drilled for bolts, and insulated joints applied. The long rails are anchored by 48 grip-type anchors in each 39-ft. panel. For each rail these are applied two against each face of every other tie, thus providing anchorage in both directions.

The time consumed by the work train in hauling and unloading three quarter-mile lengths of rail is about 2 to 2½ hr. About the same amount of time is required to hand weld a joint, normalize it and give it the Magnaflux test. The time required for the gang (about 40 men) to relay a quarter-mile length of rail and to take care of necessary tie spacing is about two hours.

The continuous rail project is being carried out by Great Northern personnel under the general direction of H. J. Seyton, chief engineer. L. J. Gilmore, general roadmaster, has direct supervision over the work, assisted by Henri Ferryman, division roadmaster, and Adolph Holm, district roadmaster. The welding gang foreman is Harold Rich. The work was started on May 16.



Before a weld is accepted as satisfactory it is dusted with Magnaflux powder in the presence of a magnetic field produced in the rail by a large electromagnet. The pattern assumed by the powder reveals possible flaws in the weld or gives evidence of seams not ground out

TEXAS TRUCKERS KNOW THE TRICKS

There is no question about there being a great deal of overloading of trucks in Texas. Nearly 400 truck operators were convicted in the month of April on charges of overloading. Inspectors of the license and weights division, which is the enforcement agency involved, say that the number of overloaded trucks stopped gives little idea of the number actually on the highways.

With only 23 inspectors trying to enforce the law, it is only an occasional truck that is caught. The small number of inspectors hampers the enforcement in other ways.

The Texas law prescribes a graduated penalty for first, second and third offenders. It was intended to be severe enough to make it unprofitable to be convicted more than once. It hasn't worked out that way in most counties. Charges are filed in justice of the peace courts, which in most counties operate on a fee basis. If the complaint charges a second or third offense, the truck driver fights the case and, if convicted, appeals. He must be released on bond, and he just doesn't return to that county. So the court fees are not paid. After that the justice refuses to take any but a first offense case, knowing the trucker will plead guilty to that and pay his fine and costs.

The lack of inspectors also is blamed for the fact that a trucker who has paid his fine usually continues on his way with his overloaded truck. The law states that he can drive on to a place where there are facilities for storing the overload, if the cargo is perishable, as most of them are. . . .

All trucks operated in cities and on rural roads pay about 30 per cent of the total highway user payments and, according to the chief engineer of the California division of highways, trucks are responsible for 55 per cent of the total cost of highway construction and maintenance. If that is true, then the taxpayers are stuck with a considerable part of construction and maintenance costs just to subsidize the trucking industry. The public is under no obligation to pay for facilities for the use of private commercial enterprise.

—*From the Houston (Tex.) Chronicle*

Communication . . .

U. S. Austrian Chamber of Commerce Wants Railroad Technical Publications

NEW YORK

TO THE EDITOR:

We have been told by the railroad department of the Technische Hochschule in Vienna (a university training railroad engineers) that as the result of the war and the German occupation their railroad library is depleted and lacks material about modern American railroad methods and equipment.

We are willing to act as a collecting center for railroad literature, periodicals, technical publications, labor relations material and catalogs of railroad equipment. By supplying this material to the school in Vienna we hope to contribute to recovery in Europe and to do our share in communicating American "know-how" to a country which has suffered by the war. Austria is badly in need of modern railroad management information and of information on American technical equipment. We intend to cover the cost of shipment of the collected material to Vienna. There is hope that this information material may lead to the purchase of American equipment by the Austrian railroads.

Some of the readers of your publication may be willing to supply material.

PAUL A. GOLDSCHMIDT
Office Manager,
United States Austrian Chamber of Commerce,
165 West 46th St.,
New York 19

Purchases From Manufacturers Continue at High Rate

Class 1 railroad expenditures for materials, supplies and fuel, plus equipment orders, totaled $163,240,000 in April, 1949. All categories in the *Railway Age* breakdown of purchases showed declines from the previous month, with the single exception of rail, buying of which was up 14 per cent from March. However, for the first four months of the year, the picture was somewhat different, only the expenditures for fuel and the equipment orders being below the figures for the same period last year. Purchases of manufactured articles in the first third of 1949 were almost $25 million above the figure for similar products in the corresponding months of 1948. This is an increase of about 6 per cent.

Inventories of most items were still on the rise on April 1, with the exception of fuel. Scrap inventories had reached their high point for the year to date. The individual values of stores stocks of rail, crossties and miscellaneous material rose between 2 per cent and 9 per cent in the month from March 1 to April 1.

1949 RAILWAY PURCHASES*

	April (000)	Four Month Totals 1949 (000)	Four Month Totals 1948 (000)
Equipment**	$ 126	$ 30,916	$ 308,971
Rail	11,024	36,681	30,254
Crossties	8,119	31,150	22,074
Other Material	95,078	387,270	378,604
Total from Manufacturers	$114,347	$486,017	$ 739,903
Fuel	48,893	229,083	270,852
Grand total	$163,240	$715,100	$1,010,755

* Subject to revision
**Amount placed on order

Equipment orders in April had a total estimated value of only $126,000, which represents an order for 30 freight cars. There were no orders for locomotives or passenger cars.

APRIL* PURCHASES OF MANUFACTURED GOODS (Excl. Equip. & Fuel)

Year	April '49 Compared to Other Aprils (000) Amt.	% Change
1943	$67,218	+70
1944	82,257	+39
1945	84,137	+36
1946	84,686	+35
1947	110,847	+ 3
1948	111,691	+ 2
1949	114,221	

Month	April '49 Compared to Other Months '48 and '49 (000) Amt.	% Change
Jan. '48	$102,136	+12
Feb. '48	99,805	+14
Mar. '48	117,300	— 3
Jan. '49	114,528	—
Feb. '49	108,941	+ 5
Mar. '49	117,411	— 3
Apr. '49	114,221	

Year	Four Month Totals '49 And Other Years (000) Amt.	% Change
1943	$250,453	+82
1944	329,297	+38
1945	321,609	+42
1946	298,322	+53
1947	397,955	+14
1948	430,932	+6
1949	455,101	

APRIL* PURCHASES OF RAIL

Year	April '49 Compared to Other Aprils (000) Amt.	% Change
1943	$4,181	+164
1944	6,175	+ 79
1945	5,621	+ 96
1946	6,207	+ 78
1947	6,767	+ 63
1948	5,532	+ 99
1949	11,024	

Month	April '49 Compared to Other Months '48 and '49 (000) Amt.	% Change
Jan. '48	$7,547	+46
Feb. '48	8,353	+32
Mar. '48	8,822	+25
Jan. '49	7,359	+50
Feb. '49	8,645	+28
Mar. '49	9,653	+14
Apr. '49	11,024	

Year	Four Month Totals '49 And Other Years (000) Amt.	% Change
1943	$18,050	+103
1944	26,562	+ 38
1945	23,848	+ 54
1946	15,388	+138
1947	28,299	+ 30
1948	30,254	+ 21
1949	36,681	

APRIL* PURCHASES OF CROSSTIES

Year	April '49 Compared to Other Aprils (000) Amt.	% Change
1943	$6,625	+23
1944	6,745	+20
1945	5,647	+44
1946	7,720	+ 5
1947	9,117	—11
1948	5,940	+37
1949	8,119	

Month	April '49 Compared to Other Months '48 and '49 (000) Amt.	% Change
Jan. '48	$5,630	+44
Feb. '48	4,636	+75
Mar. '48	5,868	+38
Jan. '49	7,799	+ 4
Feb. '49	7,029	+16
Mar. '49	8,203	— 1
Apr. '49	8,119	

Year	Four Month Totals '49 And Other Years (000) Amt.	% Change
1943	$21,673	+44
1944	27,685	+13
1945	22,247	+40
1946	27,651	+13
1947	31,666	— 2
1948	22,074	+41
1949	31,150	

*Subject to revision

APRIL* PURCHASES OF OTHER MATERIAL

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)			Four Month Totals '49 And Other Years (000)		
Year	Amt.	% Change	Month	Amt.	% Change	Year	Amt.	% Change
1943	$56,412	+69	Jan. '48	$88,959	+ 7	1943	$210,730	+84
1944	69,337	+37	Feb. '48	86,816	+10	1944	275,050	+41
1945	72,869	+30	Mar. '48	102,610	— 7	1945	275,514	+41
1946	70,759	+34	Jan. '49	99,370	— 4	1946	255,283	+52
1947	94,963	——	Feb. '49	93,267	+ 2	1947	337,990	+15
1948	100,219	— 5	Mar. '49	99,555	— 4	1948	378,604	+ 2
1949	95,078		Apr. '49	95,078		1949	387,270	

APRIL* PURCHASES OF FUEL

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)			Four Month Totals '49 And Other Years (000)		
Year	Amt.	% Change	Month	Amt.	% Change	Year	Amt.	% Change
1943	$48,369	+ 1	Jan. '48	$73,468	—33	1943	$179,091	+28
1944	51,655	— 5	Feb. '48	70,185	—30	1944	205,314	+12
1945	45,601	+ 7	Mar. '48	68,932	—29	1945	185,314	+24
1946	29,333	+67	Jan. '49	65,076	—25	1946	183,871	+25
1947	52,465	— 7	Feb. '49	57,460	—15	1947	226,257	+ 1
1948	58,267	—16	Mar. '49	57,654	—15	1948	270,852	—15
1949	48,893		Apr. '49	48,893		1949	229,083	

APRIL* TOTAL PURCHASES (Excl. Equip.)

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)			Four Month Totals '49 And Other Years (000)		
Year	Amt.	% Change	Month	Amt.	% Change	Year	Amt.	% Change
1943	$115,587	+41	Jan. '48	$175,604	— 7	1943	$429,544	+59
1944	133,912	+22	Feb. '48	169,990	— 4	1944	534,611	+28
1945	129,738	+26	Mar. '48	186,232	—12	1945	506,923	+35
1946	114,019	+43	Jan. '49	179,604	— 9	1946	482,193	+42
1947	163,312	——	Feb. '49	166,401	— 2	1947	624,212	+10
1948	169,958	— 4	Mar. '49	175,065	— 7	1948	701,784	— 3
1949	163,114		Apr. '49	163,114		1949	684,184	

APRIL* INVENTORIES OF RAIL

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)		
Year‡	Amt.	% Change	Month	Amt.	% Change
1943	$20,753	+106	Jan. 1, '48	$32,924	+31
1944	26,923	+ 59	Feb. 1, '48	36,120	+18
1945	27,142	+ 57	Mar. 1, '48	37,341	+14
1946	24,064	+ 77	Jan. 1, '49	33,243	+28
1947	29,775	+ 43	Feb. 1, '49	36,408	+17
1948	36,572	+ 17	Mar. 1, '49	39,054	+ 9
1949	42,681		Apr. 1, '49	42,681	

APRIL* INVENTORIES OF CROSSTIES

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)		
Year‡	Amt.	% Change	Month	Amt.	% Change
1943	$62,280	+64	Jan. 1, '48	$92,300	+10
1944	81,525	+25	Feb. 1, '48	93,492	+ 9
1945	78,236	+30	Mar. 1, '48	98,843	+ 3
1946	80,724	+26	Jan. 1, '49	94,256	+ 8
1947	97,549	+ 5	Feb. 1, '49	94,164	+ 8
1948	96,782	+ 5	Mar. 1, '49	98,833	+ 3
1949	101,987		Apr. 1, '49	101,987	

APRIL* INVENTORIES OF OTHER MATERIAL

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)		
Year‡	Amt.	% Change	Month	Amt.	% Change
1943	$371,332	+74	Jan. 1, '48	$560,703	+16
1944	400,722	+62	Feb. 1, '48	570,201	+14
1945	441,106	+47	Mar. 1, '48	577,078	+12
1946	451,262	+44	Jan. 1, '49	611,864	+ 6
1947	519,985	+25	Feb. 1, '49	626,423	+ 3
1948	587,390	+10	Mar. 1, '49	636,700	+ 2
1949	647,641		Apr. 1, '49	647,641	

APRIL* INVENTORIES OF SCRAP

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)		
Year‡	Amt.	% Change	Month	Amt.	% Change
1943	$10,517	+79	Jan. 1, '48	$13,225	+43
1944	10,334	+83	Feb. 1, '48	13,336	+42
1945	15,345	+23	Mar. 1, '48	16,409	+15
1946	11,369	+66	Jan. 1, '49	18,849	——
1947	11,222	+68	Feb. 1, '49	18,735	+ 1
1948	15,783	+20	Mar. 1, '49	18,532	+ 2
1949	18,872		Apr. 1, '49	18,872	

APRIL* INVENTORIES OF FUEL

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)		
Year‡	Amt.	% Change	Month	Amt.	% Change
1943	$50,330	+63	Jan. 1, '48	$66,388	+24
1944	49,938	+64	Feb. 1, '48	66,727	+23
1945	52,313	+57	Mar. 1, '48	65,071	+26
1946	48,993	+67	Jan. 1, '49	96,900	—15
1947	51,207	+60	Feb. 1, '49	91,831	—11
1948	64,153	+28	Mar. 1, '49	88,647	— 7
1949	82,014		Apr. 1, '49	82,014	

APRIL* TOTAL INVENTORIES†

April '49 Compared to Other Aprils (000)			April '49 Compared to Other Months '48 and '49 (000)		
Year‡	Amt.	% Change	Month	Amt.	% Change
1943	$515,212	+73	Jan. 1, '48	$765,540	+17
1944	569,442	+57	Feb. 1, '48	779,876	+15
1945	614,142	+45	Mar. 1, '48	794,742	+12
1946	616,412	+45	Jan. 1, '49	855,112	+ 4
1947	709,738	+26	Feb. 1, '49	867,561	+ 3
1948	800,680	+12	Mar. 1, '49	881,766	+ 1
1949	803,195		Apr. 1, '49	893,195	

*Subject to revision

†All total inventory figures taken from I.C.C. statement M-125 for the month preceding the one indicated.

‡April 1.

A. A. R. Mechanical Division Faces Challenge of 40-Hour Week

Principal speakers at the annual meeting in Chicago touch on this subject—16 committee reports presented

At the opening session of the 23rd annual meeting of the Mechanical Division of the Association of American Railroads, held at the Congress Hotel, Chicago, June 27 to 29, inclusive, addresses were presented by Gustav Metzman,* president of the New York Central, and J. H. Aydelott, vice-president, Operations and Maintenance Department, A.A.R., both of whom stressed the drastic character of changes in mechanical department operations which will be necessitated by the 40-hour week ruling, effective September 1. This subject was also discussed, and specific suggestions were advanced, by J. E. Goodwin,* vice-president and executive assistant to the president of the Chicago & North Western, on the morning of the second day.

The total registration of railroad men was 259 and an equal number of associate members and guests of the division was on hand to hear President Metzman's opening address.

No exhibit of railway equipment and supplies was held in conjunction with the annual meeting of either the Mechanical Division or the Purchases and Stores Division, which met at the same time at the Palmer House, Chicago. The general committees of the two divisions were tendered an honorary luncheon at noon, June 27, by C. W. F. Coffin, president of the Railway Supply Manufacturers' Association.

All sessions of the annual meeting were presided over by A. K. Galloway, general superintendent of motive power and equipment of the Baltimore & Ohio, chairman of the division. Other division officers are vice-chairman, B. M. Brown, general superintendent of motive power, Southern Pacific; V. R. Hawthorne, executive vice-chairman; A. C. Browning, secretary; and J. R. Jackson, mechanical engineer of the Mechanical Division.

New General Committee Members

Members of the Mechanical Division General Committee whose terms of office expired in June, 1949, include: F. K. Mitchell, manager of equipment, New York Central; A. G. Kann, general superintendent of equipment, Illinois Central; H. B. Bowen, chief of motive power and rolling stock, Canadian Pacific; J. Gogerty, general superintendent of motive power and machinery, Union Pacific; and G. W. Bohannon, chief mechanical officer, Chicago & North Western. Messrs. Mitchell, Kann and Bohannon were re-elected to the general committee with terms expiring in June, 1951. New members, elected to the general committee for the

* The addresses by Messrs. Metzman and Goodwin were abstracted in the July 2 *Railway Age*, pages 22 and 26 respectively.

A. K. Galloway,
Chairman

B. M. Brown,
Vice-Chairman

V. R. Hawthorne,
Executive Vice-Chairman

same term, include E. R. Battley, chief of motive power and car equipment, Canadian National, and D. S. Neuhart, general superintendent of motive power and machinery, Union Pacific, in place of J. Gogerty, retired. J. D. Loftis, chief of motive power and equipment, Atlantic Coast Line, was elected, with term expiring in June, 1950, in place of C. B. Hitch, retired chief mechanical officer, Chesapeake & Ohio.

AYDELOTT TALKS ABOUT CAR SUPPLY AND CLAIMS

In a little less than three and one-half years the railroads have added 250,000 new cars to their ownership. In the same period they have retired 240,000 cars including those destroyed in wrecks or by fire. For many months the number of cars receiving repairs with a considerable proportion being upgraded has approximated 30,000 cars a month, so that since V-J Day about 50 per cent of the total ownership of railroad cars has been replaced either with new cars or with those which have been rebuilt. This is quite a remarkable performance in view of the difficulties in securing steel; also because the percentage of home cars on home lines dropped so low during 1946 and 1947 and did not improve materially until about the middle of 1948. The percentage of box cars on line during most of 1946 and 1947 was frequently as low as 17.

The physical condition of the freight car fleet at any time is seemingly dependent upon how well the Car Service Rules are observed by railroads and shippers. When the demand for cars became easier last year and it became possible to secure more loading of cars with proper regard to the location of the owner, the percentage of home cars on home lines began to improve and as of May 15 the percentage of box cars on home lines was 44.4 and of all cars 57 per cent. There was reported as of June 1, 108,532 freight cars awaiting repairs of which 43,302 were box cars. This is an increase of 23,000 cars over the number on hand in bad order on June 1, 1948. There has been a consistent increase each month in the number of cars on hand awaiting repairs largely as a result of this better observance of Car Service Rules and lighter loading requirements.

Pending a determination of what the traffic volume might require in the way of equipment when economic conditions are finally considered to be in adjustment, cars awaiting repairs will furnish quite a reservoir of equipment upon which to draw should an increased traffic volume require it. To a considerable extent these bad order cars are of modern design and when rebuilt will amply protect the same character of commodity loading as does the new car. With the railroads having a known capacity for turning out 30,000 heavy repair cars each month, it can be seen that the rate of delivery of newly conditioned freight cars, as compared to that of new equipment, will be practically three times as great. This, with other factors, accounts for the rapid decline, and almost disappearance, of orders for new cars during the last several months. From the cars among the 108,000 which will be torn down instead of repaired a lot of usable material will be reclaimed and a considerable tonnage of scrap will be made available to the steel companies. These figures are most enlightening in view of the criticism of the failure of the railroads to order more new cars, bringing out the suggestion that the government should purchase a huge supply in order that there might be no ill effects to the economy or security of the nation should a national emergency occur.

Poor Cars Responsible for Claims

I urge each of you to review the statistics showing freight claim payments made by the railroads during the year 1948 in the total amount of $135,000,000. The loading of commodities in cars which evidently were in

A. A. R. Mechanical Division Officers

A. C. Browning,
Secretary

J. R. Jackson,
Mechanical Engineer

unfit condition to carry the load without damage influenced claim payments to the extent of more than $3,000,000. However, more than $35,000,000 was charged to unlocated damage and there is a growing suspicion that some considerable portion of this damage was due to the run-down condition of much of the equipment used or from poor riding qualities of many of our box and refrigerator cars which qualities may be more or less inherent in the construction of the car itself.

That the number of freight claims filed in 1948 declined nearly one million from the number filed in the previous year seems conclusive evidence that the retirement of so many thousands of old and worn out freight cars contributed greatly to reduction in loss and damage expense, the traffic volume in 1948 being only slightly less than that of 1947. The 1947 volume exceeded that of any wartime year.

The railroads hope to improve the riding qualities of cars by developing better trucks and by giving closer attention to wheels and the manner in which wheels are mounted.

Whether the improvement in the trucks and wheels will be sufficient to provide a smoother movement for the loaded car whether it contains 25 tons or 50 tons remains to be seen. We have this variation in the load both with box and with refrigerator cars and the claims paid for unlocated damage are extremely heavy with commodities handled in both types of cars.

"Special-Design" Cars

Another problem confronting the railroads, and the mechanical departments in particular, is the desire of some shippers to have a car of special design provided for their particular commodity which, if done, will, in considerable measure, destroy the value of a car for return loading, such as we have had with ordinary box cars.

It is quite likely, as industry seeks to lower the handling cost of its product both at the point of origin and at destination, that we shall have more of these requests and they shall, of course, receive the careful consideration and analysis of the railroad industry.

The railroads are well on their way toward the complete modernization of their freight car fleet as to the application of AB brakes, larger couplers and stronger floors. In view of the growing use of lift trucks and pallets by shippers it is most important that box cars, in particular, be provided with floors which will withstand the weight of these machines.

In the past year the railroads have moved consistently forward with respect to the quality of their locomotives, freight cars and passenger cars. In no previous period of the same duration have greater strides been made in this respect than have occurred since the close of World War II and it was accomplished in spite of critical material shortages and of extraordinary maintenance which has accumulated on many thousands of the freight cars during the time they were away from the owners' rails. We are in an era of intensive competition and it will behoove the railroad industry to keep its rolling stock in first class condition so that there shall be a progressive improvement in the character of service rendered by the railroads and that waste such as loss and damage to freight be reduced to the lowest possible figure.

CHAIRMAN DISCUSSES DIVISION'S WORK

The mechanical departments of the Class I railroads were responsible for the expenditure of $1,558,010,454 in 1947 for maintenance of equipment and other expenses. The total operating revenue during 1947 was $8,684,918,252. This meant that the mechanical departments spent approximately 18 cents of each dollar earned.

Since the war, the railroads have acquired large amounts of new power, mostly Diesel-electric, and many thousands of new and improved freight and passenger cars. Much of this new equipment was built in shops owned and operated by the railroads. In addition, many thousands of freight cars have been rebuilt or given general heavy repairs, and the same is true of passenger-equipment cars.

Shops, facilities and tools have also been provided to replace the obsolete and worn-out equipment. During 1948 the railroads spent more money for improvements than ever before—$920 million on new locomotives and new freight and passenger cars; and in addition, $330 million for heavier rail, better signals, elimination of grades and curves, and other improvements in the fixed plant.

As a result of these extensive improvement programs since the war, American railroads have been able to carry more tons of freight at higher average speed than ever before, to improve service and reduce operating costs. The average load of freight per train in 1948 was 1,176 tons; an increase of 30 tons above the previous high record established in 1947. It was also an increase of 37 tons above 1944, the peak war year. In 1929 the average was only 804 tons.

Tons of freight moved one mile for each hour of freight train operation averaged 18,779 in 1948, compared with the previous high of 18,126 ton-miles in 1947 and 10,580 in 1929. The performance in 1948 was greater by 6.6 per cent than the wartime record of 17,623 ton-miles per hour attained in 1944.

These records were possible because of improved operating methods, larger and more efficient locomotives, better freight cars, improved signaling and other devices.

Research To Be Continued

Mechanical officers recognize that safe and economical operation of the railroads can only be maintained and improved by additional improvements in methods of doing work, in design and construction of equipment and facilities. This is especially true as our labor and material expenses have increased since January 1, 1948, and with the 40-hour week that will become effective September 1, we will have difficulty in keeping our maintenance-of-equipment expenses in the proper ratio.

To continue research on these improvement programs, a budget of $439,745 was approved for the Mechanical Division for the year 1949 at the A.A.R. annual member road meeting held in New York, November 19, 1948.

In addition, the A.A.R. is constructing a research center at the Illinois Institute of Technology, Chicago, which will house the research offices and staffs and be

the nucleus around which will be built even greater research activities than those carried on heretofore.

The railroads have embarked on a large research program, both individually and collectively, through the A.A.R.

Among Mechanical Division outstanding research projects are improved freight car trucks and devices to provide easier riding freight cars, improved lubrication of cars and locomotives, improved wheels and other parts of cars and locomotives, and in fact improvements to all appurtenances and devices used in locomotive and car construction.

The manufacturers of railway equipment are cooperating wholeheartedly in the research program being carried on and are conducting extensive research to improve the product which they offer and sell.

Committee Activities

The Committee on Lubrication of cars and locomotives will submit a proposed A.A.R. Manual of Lubrication and Lubricating Practices for Railway Equipment Cars, incorporating the various instructions and standards pertaining to this subject. It is the intent to issue this Manual in separate pamphlet form, when approved.

Following the adoption of revised Specifications for Journal Box Lids effective March 1, 1948, twenty designs submitted by six manufacturers have been formally tested and approved and certificates of approval issued.

As the result of the completion of satisfactory laboratory tests and the excellent performance of six cars in general service equipped with experimental Type F interlocking couplers for freight equipment, the Committee on Couplers and Draft Gears has authorized additional applications up to 250 car sets to cars in interchange service in order to obtain further service experience.

Following the completion of exhaustive service tests of D-22 control valves for HSC brake equipment, the Committee on Brakes and Brake Equipment is recommending that the mandatory cleaning period be advanced from 15 to 24 months.

A revision of the Air Brake Maintenance Rules, to bring them up-to-date in accordance with present day developments and operation, and including provisions applicable to locomotives other than steam, is being reviewed with representatives of the Bureau of Safety of the Interstate Commerce Commission.

After several years road service and laboratory tests in cooperation with the Brake Beam Manufacturers Mechanical Committee, the Committee on Car Construction is recommending revision of the Standard Brake Beam Specifications and Tests to require approval tests and certification of brake beams. The recommendation provides that A.A.R. Standard No. 15 and A.A.R. No. 3 beams are to be superseded by a new No. 18 beam, with requirements that beams of not less capacity than the No. 18 be made mandatory for new and rebuilt cars and for new beams applied to existing cars after a future date to be established.

The Committee on Wheels has prepared a new section for the Wheel and Axle Manual, containing instructions for maintenance, repairs and renewal of journal roller bearing assemblies, journal boxes, wheels and axles, and periodic magnetic testing of axles equipped with roller bearings.

A special joint subcommittee consisting of representatives of the Wheel, Car Construction, Locomotive Construction, Brake and Specifications Committees, the Diesel locomotive builders, car builders, air brake manufacturers, wrought steel wheel industry, truck manufacturers and manufacturers of foundation brake rigging, has been organized to consider the matter of thermal checking of wrought steel wheels in passenger service and failure of wrought steel wheels in Diesel locomotive service.

Shippers Forming Commodity Groups

There is an increasing tendency among shippers to establish groups or committees representing particular commodities, to work with the Committees on Loading Rules in determining the most satisfactory and safest methods of loading and then standardizing such loading methods. At present, six such groups of shippers are active in studies of this kind.

The matter of standardization of parts of Diesel locomotives is being continued by the Committee on Locomotive Construction and a recommendation is advanced this year for adoption as recommended practice of a considerable number of details of the component parts for interchangeable trucks for Diesel-electric switching locomotives.

Laboratory studies of roller bearing lubricants, also studies of journal box lubricating materials (oil, waste, etc.) are being progressed at the Indianapolis Lubrication Laboratory under direction of the Mechanical Research Office.

The road test program of trucks for high speed freight service and freight truck spring snubbing devices is scheduled to continue during 1949 under the same general pattern as followed during the 1948 road tests in order that the results obtained may be comparable.

The ABLC brake equipment, in tests, developed certain modifications which it is felt will improve the service performance. These changes are being worked out in cooperation with the manufacturers and, after further tests, appropriate recommendations will be made.

The time has come for us to take stock of the social and economic conditions confronting us, for we are on the verge of a fatal decision. Either we accept the responsibility of solving our own problems and providing our own security or else depend upon the men employed in government to assume that responsibility for us. If we choose the former course, we shall preserve our freedom; if we choose the latter, we shall sacrifice it. The decision cannot be delayed for long, for socialism under various appealing disguises is steadily fastening itself upon our national economy. If we become too deeply involved, there is no turning back, no re-tracing of steps. We must make our choice between economic freedom and dictatorial serfdom; between capitalism and socialism; between free enterprise and socialistic planning. We cannot have both socialism and freedom at the same time. Eventually, either one or the other must perish.

—*W. G. Vollmer, president, Texas & Pacific*

COMMITTEE REPORTS
Of the Mechanical Division

Locomotive Construction

Several subjects on which reports are made by the Committee on Locomotive Construction apply to more than one kind of motive power. These are, therefore, presented in a "General" section separate from the three sections devoted to steam, Diesel and gas-turbine locomotives. The report on each subject is the work of a subcommittee.

H. H. Lanning
Chairman

General

Marking Diesel Wheels.—Because the number of wrought-steel wheels on Diesel locomotives reported failing through cracks originating in the identification stamping on the back of the rim has been increasing, a revision in marking requirements of these wheels was authorized by the General Committee and presented to the members in a circular letter dated March 7, 1949.

Driver and Trailer Tires.—To clarify the information as to the contour of driving and trailer tires in the Manual, the drawing showing "Section of Tire" (Manual, page F-7 and Locomotive Tire Manual, page 27) is to be changed to drop the location of the taping line and to show optional lip and groove on the inside diameter of the tire.

Roller-Bearing Performance.—To procure up-to-date performance data of roller bearings on steam-locomotive driving axles as compared with friction bearings, a questionnaire was submitted to a selected group of railroads having roller-bearing locomotives which were formerly equipped with friction bearings. Questions covered the effect on mileage between shoppings for machinery repairs, the mileage life of main driving axles equipped with roller bearings, and the practice of the roads with respect to the use of stress-relief grooves. Data on tender-axle performance was also developed. The performance comparisons in the table are from railroads having in service locomotives of the same classes with both friction and roller bearings.

Three styles of stress-relief grooves were illustrated in the report and mileage limits reported for main axles with grooves varied from 200,000 to 700,000. Some roads have established no mileage limits, but depend upon pressing axles part way out of the wheels at shoppings and testing with magnetic particles.

In the 1947 report of this committee a performance average of 864,147 miles per locomotive failure chargeable to tender-axle roller bearings was recorded. Reports from seven roads vary from 1,538,000 miles per hot bearing on 396 tenders equipped with roller bearings to 26,000,000 miles per hot bearing with 91 tenders equipped. One road reported no hot bearings on six classes numbering 102 tenders equipped and one hot bearing on each of two classes with a total of 13 tenders equipped.

Diesel Truck Pedestal Openings.—Since 1940 the committee has been engaged in the development of standards for locomotive pedestal openings for roller-bearing boxes. The subject embraced all types of motive power and tenders. A mass of information on steam motive power was collected, but is not now considered to be of sufficient interest to warrant publication.

The committee prepared two sheets on which are shown comparisons of pedestal-opening dimensions of various types of Diesel locomotives with the standards proposed by the committee. Six standards are proposed. Three are based on the 5-in. by 9-in., the 5½-in. by 10-in., and the 6-in. by 11-in. A.A.R. standard journal boxes, respectively. They differ from these principally in a considerable increase in the total height of the pedestal openings, and smaller changes in the width of opening and width and height of pedestal liner faces. These conform to Whitcomb locomotive boxes, except that the pedestal faces are wider.

The 1947 recommended-practice pedestal has a 11⅛-in. opening and is standard on a number of switching and road switching locomotives of all of the builders except Alco. The trucks on one Baldwin 1,500-hp. road switcher and one 2,000-hp. transfer locomotive can be made to conform by increasing the width of the pedestal liner faces.

The two remaining proposals, designated A, and B, have 15 1/16 in. pedestal openings. Proposal A is standard on Baldwin 1,000-hp. road switchers and

MILEAGE COMPARISONS OF LOCOMOTIVES WITH ROLLER BEARINGS AND FRICTION BEARINGS

Road	Loco. type	Service	No. of locos. in class with roller bearings on driving axles	Roller bearings on all driving axles or main only	Mileage between machinery shoppings, roller bearing locos., per cent of friction-bearing locos. of same class
A	4-6-2	Passenger	24	All	150
A	4-6-2	Passenger	5	All	177
B	4-6-2	Passenger	4	All	140
B	4-6-4	Passenger	5	All	180
B	2-8-2	Freight	42	Main only	170
B	2-8-2	Freight	29	Main only	150
D	2-8-2	Freight	34	All	157
B	2-8-4	Freight	12	Main only	117
A	4-8-2	Passenger	26	All	177
B	4-8-2	Freight	28	Main only	129
D	4-8-2	Passenger	18	All	145
C	4-8-4	Frt.-Pass.	23	All	140
D	4-8-4	Freight	65	All	120
A	2-10-2	Freight	10	All	168
B	2-10-2	Freight	73	Main only	207
D	2-10-2	Freight	1	All	167
B	2-10-4	Freight	5	Main and No. 4	139

1,500-hp. freight locomotives. Trucks of Alco 1,000-hp. road switchers require increased width of pedestal faces, shorter pedestal liners and shorter axles to conform. All Electro-Motive Division 1,500-hp. models require a revised box or a shorter axle to conform.

Trucks of Alco 1,500-hp. road switch and freight locomotives can be made to conform to Proposal B by reducing the width of the frame jaw and increasing the length of the pedestal liners, and the Alco and Baldwin 2,000-hp. passenger units require only shortening the pedestal liners. Replacement of vulcanized-rubber sandwich liners on the pedestal faces of Fairbanks-Morse 2,000-hp. passenger locomotive with thinner steel liners brings them into line. The Electro-Motive Division 2,000-hp. passenger locomotive requires an increase in the axle length as well as wider pedestal liners.

The changes which would have the greatest effect on existing replacement stocks are the axle length and box dimensions of the Electro-Motive Division roads units.

The committee asks member roads to review the report and make comments, criticisms, or suggestions.

Steam Locomotives

Additional Material Specifications.—To complete the work on specification references for material on design drawings, the committee points out that there are no suitable A.A.R. specifications to cover material for injector screw coupling sleeves and nuts, lubricator fittings, copper tubing, and copper flue ferrules. The Committee on Specifications for Materials has questioned the necessity for such specifications. After again considering the subject, the Committee on Locomotive Construction is unanimously of the opinion that the four additional material specifications are desirable and again refers the matter to the Committee on Specifications for Materials.

Lubricator Oil-Line Fittings.—After a canvas of 32 selected member roads as to the desirability of standardizing mechanical lubricator oil-line fittings, it is the opinion of the committee that, "In view of the reduced inventory of steam locomotives and the declining market for new lubricators, any standardization of oil-line fittings would, in general, if adopted, result in increased expense to both the railroads and the lubricator manufacturers which, in most instances, could not be offset by any savings which might result.

Hand-Rail Columns.—In 1925 nine designs of hand-rail columns which provided for ready removal of the hand rail were submitted as information. These designs have been reviewed and a drawing showing nine styles accompanies the report. Four are of those submitted in 1925; three are later designs. Two provide for supporting an independent conduit for electric wiring. Eight of the designs are recommended for adoption as Recommended Practice and the other as an acceptable alternate design.

Fusion-Welded Boilers.—There is no change in the number of complete boilers built by the fusion-welding process since the last report of the committee. The first fusion-welded boiler was built for the Delaware & Hudson in 1937 and since that time 25 complete boilers have been built and six more are on order. The New York Central has had 24 welded shells built for 4-8-4 type locomotives and has 20 on order for 4-6-4 type locomotives.

To clarify misunderstanding as to how repairs are to be made to boilers of welded construction, the report sets forth a specification as to welding, stress-relieving, removing and rewelding pin holes, cracks or other defects, and testing.

Seal-Welding of Staybolts.—Of the 91 member roads owning 32,795 steam locomotives replying to a questionnaire, 23, or 25 per cent, equip locomotives with seal-welded staybolts. This practice is standard on seven of the 23 roads and undergoing tests on the other 16. Several methods are described.

The seven roads on which the practice is standard indicate an increase in the life of firebox sheets ranging from 50 per cent to 100 per cent.

Counterbalancing.—No new steam locomotives have been built or existing locomotives rebuilt with lightweight reciprocating parts since the last report of the committee. The committee is of the unanimous opinion that no further counterbalance tests of steam locomotives are necessary and recommends that the subject be closed.

Diesel-Electric Locomotives

Diesel Truck Parts.—Details of the component parts for the interchangeable truck for 600-hp. and 1,000-hp. Diesel-electric switching locomotives adopted as Recommended Practice in 1947 are presented by the committee in a supplement of 20 drawings. The committee proposes these for adoption by letter ballot as Recommended Practice.

Brake Shoes for Diesel Road Locomotives.—Two styles of compromise-radius brake shoes for Diesel-electric road locomotives with 36-in. to 42-in. wheels were presented in the 1948 report for the purpose of simplifying stocks. These were 18-in. and 20-in. back radius and both had the same face radius. The 20-in. back radius is preferred and should result in less scrap when worn out. It is proposed that this shoe, a drawing of which is included in the report, be adopted by letter ballot as Recommended Practice.

Type Designation of Locomotives Other than Steam.—Pages F-103 and 104 of the Manual of Standard and Recommended Practices show a standard practice for designating axle arrangements for electric locomotives and internal-combustion locomotives having electric transmission adopted in 1932. In the 1948 report to the members the committee undertook to clarify the practice so that it can be more uniformly applied and, if possible, include some identification of the service in which the locomotive is used.

It is the opinion of the Locomotive Construction Committee that any attempt to include description beyond a statement of the axle arrangement would be unduly complicated. Consequently, it is proposed at this time to revise only the present standard practice to bring it more up to date and to clarify the application by means of diagrams. No extensive revision is necessary except that a somewhat altered interpretation of the description of multiple-unit locomotives is introduced in that the wheel arrangements of units permanently connected by drawbars are set up as complete locomotives, similar to the practice in steam locomotives. For example, an articulated locomotive is set up in the Whyte system as a 4-6-6-4 and, similarly, with two units each with two four-wheel swivel trucks is set up as (B-B) + (B-B). Where the units are the same but not readily separated, the classification would be 2 (B-B), as illustrated in the diagrams.

It is recommended that the proposed revisions of the standard nomenclature for designating wheel arrangements for locomotives with electric transmission be submitted for adoption by letter ballot.

Diesel Fire Protection.—The Fire Protection and Insurance Section has now made a survey of 54 railroads, representing the majority of owners of Diesel locomotives, to determine present practices as to fire protective equipment. At this time, the returns have not been fully analyzed. However, a preliminary check discloses that there is still a rather wide difference of opinion as to the amount of protection required. The choice of quenching media has apparently narrowed to carbon dioxide and dry powder although some of the railroads reporting still use carbon tetrachloride.

There has been some employment of foam for fire protection. One railroad reports using a two and one-half gallon portable foam extinguisher in the engine room. This same road has installed a fixed foam system in passenger locomotives, consisting of a 75-gallon water tank and 100-ft. of hose. Normally air is used as a propulsion means, with a supply of nitrogen as an auxiliary. Another railroad is now installing foam equipment consisting of 125-gallon water tank, with a 25-lb. carbon-dioxide tank to propel the water, a 10-gallon proportioning tank containing the air foam liquid, with permanently installed piping to fire-equipment boxes under the locomotive, where 100 ft. of hose and foam-making nozzle are located on each side of the locomotive. Approximately 2,000 gallons of foam will be produced. This equipment is designed for use outside the locomotive only, as its use inside with the high voltage involved is obviously dangerous.

A new quenching medium, chloro-

bromo-ethane, is now being studied. Its use is still in the experimental stages but reports indicate that it appears to be very effective. This development will be followed and further report made.

Attention is again directed to the danger of using carbon tetrachloride in engine rooms or other confined spaces and the Fire Protection Section is about ready to recommend the elimination of this type because of this feature. It is also stated that carbon tetrachloride is not too effective, and the extinguishing equipment is expensive to maintain.

The results of the survey summarized above will be published by the Fire Protection and Insurance Section and it is expected that revision of the original recommendation will be furnished to the committee for submission to the membership of the Mechanical Division.

Protection for fuel tanks has been briefly mentioned in previous reports. One of the builders is prepared to provide this protection by surrounding the fuel tank with the water tanks. The water and fuel tanks are separate and distinct tanks so that leakage between the two fluids will not be possible. This arrangement is, of course, practicable only on new locomotives, or when complete replacements of fuel and water tanks are needed. For existing tanks a protecting shield has been recommended. An arrangement applied by one railroad, which reports that it effectively prevented puncture of fuel tanks, consists of a guard of netting of ¼-in. wire and 1-in. mesh spaced away from the tank by pressed-steel members.

The subject of cleanliness and housekeeping cannot be too strongly emphasized, the report said. Floors, tank tops, trucks and other equipment kept clean of oil and dirt promote both fire prevention and safety. There appears to be no easy way to successful fire prevention. Frequent checking and inspection of fire-preventive appliances is an absolute necessity to insure that the equipment will function when the need arises. Careless or slipshod inspection and maintenance of these appliances can easily and generally does lead to serious consequences. There can be no compromise in this matter.

Instruction in the use of fire fighting appliances is of extreme importance and should not be neglected. Any instructional set-up for the operation and maintenance of Diesel locomotives should include the items of use and maintenance of fire fighting appliances.

Gas-Turbine Locomotives

Coal-Burning Developments.—The Locomotive Development Committee has made considerable progress in the development of the coal-fired gas turbine locomotive since the report of last year. Two gas-turbine power units for locomotive use remain on order, one from Allis-Chalmers and the other from the Elliott Company. It is anticipated that both power plants will be block-tested about September, 1949, using oil as fuel. Final acceptance will be contingent upon results obtained in these tests. Delivery of the two power units is expected in January, 1950.

Combustion research is being carried on at Battelle Memorial Institute, Columbus, Ohio, at the Alco Products Division, American Locomotive Company, Dunkirk, N. Y., and at Fontana, Cal., under the direction of the Turbodyne Corporation. The latter organization has completed its assigned work. Combustion efficiencies in the middle 90 per cent range have been achieved. The engineering development of the coal handling and pulverization equipment is being processed jointly by the Standard Stoker Company, Babcock & Wilcox Co., and the committee. Babcock & Wilcox are producing for the committee a type B-221 pulverizer which is an adaptation of its standard ball-mill design. This pulverizer may be operated either at gas-turbine pressure for direct injection of pulverized fuel to the combustors or at atmospheric pressure, in which case the pulverized coal is fed to the combustors by means of a coal pump. Further tests will be conducted to determine which method will be followed.

The problem of fly-ash removal has been proceeding toward a solution, in cooperation with several leading manufacturers of dust extraction equipment.

By the middle of October, 1949, it is expected a full-size, full-pressure gas-turbine power plant, complete with coal-handling, pulverizing and fly-ash-extraction equipment, will be in operation at Dunkirk Laboratory. This gas turbine is similar to the Allis-Chalmers unit, and has been loaned to the committee by the Bureau of Mines.

The American Locomotive Company and the Baldwin Locomotive Works are proceeding with the locomotive designs, based on two-unit, double-end construction, with two six-wheel trucks to each cab. The overall length of the two units is approximately 151 ft. 3 in. over the coupler knuckles. The nominal horsepower rating is 4,200. The estimated total weight of both units is 780,000 lb. The weight is distributed over 12 axles, eight of which are driving axles. The center axle in each truck is an idler axle. The estimated average weight per axle is 65,000 lb.

The estimated coal capacity of the locomotive is 18¼ tons, and water capacity 3,300 gallons. Two 3,000 lb. per hr. steam generators are indicated.

The design of the coal-burning gas turbine locomotive is kept abreast of the progress of gas-turbine construction, so there will be no unnecessary delay in building the two experimental locomotives after the gas turbines and their combustion equipment become available.

G. E. Gas Turbine-Electric Locomotive.—Early in November, 1948, the first gas-turbine-electric locomotive to be built and operated in the United States began its track tests at the General Electric Company plant at Erie, Pa. This locomotive, an Alco-G.E. 4,500-hp. unit, has been undergoing tests at Erie during the winter, and recently completed successfully a group of test runs under load conditions. It is planned to place this locomotive in operation on the Union Pacific this summer on a de...onstration basis.*

Although the gas turbine is now fired by Bunker C oil, Alco-G.E. hope that special research efforts, coupled with experience gained from operation of this first locomotive design, may lead to the development of successful means of burning coal in the gas turbine locomotive. Alco-G.E. is cooperating with the Locomotive Development Committee of Bituminous Coal Research toward that end.

Westinghouse Gas-Turbine Locomotive.—The Westinghouse 2,000-hp. gas-turbine unit, which has been on test since August 1, 1946, has been modified for gas-line booster service by the application of a centrifugal gas booster in place of the former railroad type d.c. generator. This modified unit will be used to pump natural gas into the pipe lines of the Mississippi River Fuel Corporation at Wilmar, Ark. This application will determine the life of the high temperature parts.

Two similar 2,000-hp. units will power a 4,000-hp. single-cab locomotive, which is now under construction. The estimated total weight of the locomotive is 225 tons, complete with all fuel supplies, and including train heating equipment. The locomotive is designed for passenger service, and is geared for 100 miles per hour maximum speed. The continuous tractive force is 52,800 lb. The overall length is 77 ft. 10 in. over coupler faces, the width is 10 ft. ¾ in. over the side sheets, and the height is 14 ft. 1 in. The weight is distributed over eight axles, all of which are drivers.

The complete locomotive is expected to be released for test during 1949, and will be available for demonstration thereafter.

A.T. & S.F. Gas-Turbine Locomotive.—This locomotive, which is under construction at the Baldwin Locomotive Works, is a single cab, passenger type, with 4-8-8-4 wheel arrangement. It is 91 ft, 6 in. long, coupler to coupler, d.c. electric drive, is rated at 3,750 shaft hp. and is designed for 100 m.p.h.

The gas-turbine power plant, generator, and motors will be supplied by the Elliott Company. The turbine power plant consists of a two-stage, centrifugal compressor, a four-stage reaction turbine, a single combustion chamber, and a regenerator. Eight traction motors are provided.

Progress in the construction of the oil-fired gas turbine locomotive has been seriously retarded by unexpected difficulties, experienced in the manufacture of the power plant and by priority accorded equipment for the U. S. Navy, which is being produced by the same manufacturer. The component parts of the power plant and transmission are now approximately 90 per cent complete, but an extensive program of tests are in pros-

*A description of this locomotive appeared in *Railway Age* of July 2, page 18.

pect for this equipment before it can be installed in the locomotive. Work on the trucks, underframe and superstructure was suspended sometime ago pending the successful solution of manufacturing problems which have arisen in connection with the power plant and the completion of the block tests which are to be run when the power plant has been finished.

It is expected that work on all parts of this locomotive will be resumed at an early date, and carried to completion with the least possible delay.

Lima-Hamilton Gas-Turbine Locomotive.—Lima-Hamilton has under development and construction a gas-turbine locomotive, type 0-6-6-0. This locomotive is intended as a general purpose design, having 3,200 hp. available for traction in one unit. The locomotive will be equipped with two three-axle trucks, having electric traction motors on each axle. The total weight of the locomotive is approximately 360,000 lb. The average axle loading is 60,000 lb. The unit will be an A car and it is believed that most combinations will not exceed two units.

The Lima-Hamilton type of gas turbine embodies a free-piston Diesel type compressor combustor, which supplies the power gas to drive the gas turbine. The free-piston gas-turbine power plant has several outstanding technical characteristics which make it particularly suitable for railroad locomotive application. The air compressor in the free-piston gas generator is an integral part with the Diesel cylinder and in this design all of the air pumped by the Diesel combustion is used to scavenge and supercharge its own cylinder. In this way, the high efficiencies of the Diesel cycle are transferred to the gas turbine power plant since it is possible to do the work of driving the compressor under the direct thrust of the Diesel piston and utilizing the known characteristics of Diesel combustion. The combustion gases, while burned at a high temperature level as in any Diesel engine, are expanded down during the work of compression in the compressor cylinder, reaching a low temperature level at the time when the compressed air is delivered through the Diesel cylinder, mixing with the combustion gases which are piped to the gas turbine. This cycle avoids the necessity of burning fuels at high temperatures after the compressor—these combustion gases going directly through the gas turbine in the other types of construction which embodies rotating compressors.

The free-piston gas generator is a unit cylinder, which is not attached mechanically to any driven machinery. The gas-generator delivers its mixture of combustion gases and compressed air, and as many gas generators can be piped into the turbine as will be required to produce the necessary power for any given locomotive. In the Lima-Hamilton design, six gas generators are integrated with the gas turbine and the rotating electrical equipment.

This power plant delivers a high thermal efficiency. The term "free-piston gas generator" is descriptive of the fact that the pistons are free to move in their stroke without the restriction of any mechanical connection, tied to any mechanical part that delivers power to drive the locomotive. This means that the stroke of the machine is variable and under control.

In the event of any operating casualty to one or more cylinders, the overall power plant will continue to function on the remaining cylinders and by lengthening the stroke of the power piston, which is merely a matter of controls, the plant will deliver full load to the turbine until the locomotive can be serviced. Any units taken out of service are simply valved out of the turbine gas line and the overall power plant continues to function.

Another advantage of the free piston unit is its ready accessibility for shopping. Each individual unit can be removed simply by disconnecting pipes and holding bolts requiring very little time in the operation, and there is no mechanical shaft alinement or anything of that nature to be considered.

The members of the committee are H. H. Lanning (chairman), mechanical engineer (locomotive), Atchison, Topeka & Santa Fe; *Steam and Electric Locomotive Section*: E. L. Bachman (vice-chairman), general superintendent motive power, Pennsylvania; C. H. Knowlton, assistant engineer, equipment, New York Central System; Frank Williams, chief mechanical engineer, Canadian National; D. R. Calleri, mechanical engineer, Southern Pacific; J. L. Ryan, mechanical engineer, St. Louis-San Francisco; *Diesel Locomotive Section*: A. G. Hoppe (vice-chairman), general superintendent locomotive department, Chicago, Milwaukee, St. Paul & Pacific; K. Cartwright, chief mechanical engineer, New York, New Haven & Hartford; G. W. Bohannon, chief mechanical officer, Chicago & North Western; J. D. Loftis, chief motive power and equipment, Atlantic Coast Line; G. F. Wiles, supervisor Diesel-electric locomotive operation, Baltimore & Ohio; *Gas-Turbine Locomotive Section*: H. C. Wyatt (vice-chairman), assistant general superintendent motive power, Norfolk & Western; J. B. Blackburn, engineer motive power, Advisory Mechanical Committee, Chesapeake & Ohio; J. L. Carver, mechanical and research engineer, Illinois Central; H. Rees, mechanical engineer, Union Pacific.

Discussion

F. R. Denney, assistant mechanical superintendent, Texas & Pacific, asked whether the Reflectoscope alters the outlook for roller bearings, or the design and application of stress-relieving grooves, and J. L. Ryan, mechanical engineer, St. Louis-San Francisco, said he would expect it to reduce costs, as axles do not have to be pressed out for inspection. E. D. Hall, engineer of tests, Erie, stated that the use of this device has permitted the Erie to discontinue removing axles on the basis of mileage. Cracks discovered under the wheel seat may result from the stress-relieving groove (3/16 in.) not being deep enough.

A member recommended putting to letter ballot the matter of standardization of parts between different makes of Diesel-electric locomotives so that the builders will know that the roads want standardization.

One thing considered necessary for more effective use of Diesel fire-fighting equipment is knowing what the unit will do inside the locomotive when handled by railroad personnel. What an extinguisher can do under test conditions when handled by an expert cannot be considered its normal rating. One road simulated Diesel cab conditions by igniting oil-soaked waste inside old steam locomotive tenders.

V. C. Golden, superintendent of motive power and equipment, Chicago, Indianapolis & Louisville, presented a written discussion on Dieselization of the Monon, tracing the replacement of 97 obsolete steam locomotives by 57 Diesel units totaling 79,700 hp. In addition to detailed operating figures he mentioned that the 57 units, the oldest of which is 2½ years, have 7 different wheel assemblies, 7 different traction motors, 6 different generators, 5 different types of trucks and 3 different types of engines.

It was reported for the Gulf, Mobile & Ohio that a controlling factor on Diesel mileage is wheel changes, which are made at from 75,000 to 100,000 miles. Thermal cracks are largely responsible for required changes, but they can be partly eliminated by doing away with flanged brake shoes and by education of personnel on braking trains without excessive use of locomotive brakes.

Most traction motor problems center about armature bearing lubrication, and both oil and grease are used on the G. M. & O. Maintainers have a tendency to over-lubricate with either oil or grease, causing a film to collect on the commutator resulting in a flash over. A few motors are equipped with a special grease and have the lubricating holes in the caps blanked off.

By developing a better filtering cycle and by employing more metallic filtering screens, the mileage on cotton filter elements has been increased from 3,000 to 12,000 miles, and better lubricating results are obtained. Difficulty is still experienced with cylinder heads, which is expected to be overcome by better gaskets. Progress is being made in meeting the difficulty of valves and valve seats beating out. One engine has operated 3½ years with no sign of the valves mushrooming or the seats beating out.

A builder's representative wondered just how much standardization the roads really want. In two recent orders, one road requested 57 changes, and another 42 changes. Out of these, only 7 coincided. Another example of individual

preference is the seven designs of number plates currently in use.

(The report was accepted and recommendations referred to letter ballot)

Interchange Rules Modifications

During the year Cases 1829 to 1832, inclusive, have been decided and copies forwarded to members. The principal changes recommended in the report follow. None were considered to necessitate submission to letter ballot.

No extension beyond January 1, 1950, is recommended for the following requirements in Rule 3:

1—Paragraph (j-3), requiring journal box lids having Certificate of Approval on all cars built new or rebuilt.

2—Paragraph (t-10), requiring permanent metal holders for placards on tank cars carrying inflammable, poisonous and dangerous commodities, etc.

3—Paragraph (w-3), prohibiting the use of single plate, non-bracketed cast-iron wheels, cast prior to 1938.

J. P. Morris
Chairman

The addition of new Paragraph (c-13) to Rule 3 was recommended, requiring that vertical space between top of coupler shank and under surface of striking face of striker casting on cars must not exceed 1½ in., effective January 1, 1952, from owners. It does not apply to Type F Interlocking couplers.

New Paragraph (g) and new Fig. 5 were recommended for addition to Rule 20, outlining method of adjustment where the vertical space between top of coupler shank and under surface of striker casting on cars exceeds 1½ in.

Modification of the note following Paragraph (10-k) of Rule 32 is recommended, to provide handling line responsibility for center sills bent or buckled in excess of 2 in. within a space of 6 ft., between body bolsters, instead of in excess of 2½ in. between body bolsters where caused by the application of open flame to facilitate unloading.

Modification of Paragraph (c) of Rule 49 is recommended, to provide standard locations for cardboards on cars.

A new Note 5 is recommended for addition to Paragraph (1) of Rule 60, providing for the arbitrary renewal of certain types of gaskets, etc., when type AB air brakes are given periodic attention, because of the trouble which such parts have given on cars during cold weather.

The addition of new Paragraph (c) to Rule 61 was recommended, to provide for the lubrication of center plates and friction type side bearings on the end (or ends) of cars which are on repair tracks and jacked for other work, in order to eliminate excessive binding when passing over curves.

The effective date of the following requirements in Rule 3 was recommended for extension from January 1, 1950, to January 1, 1951:

Section (a), Paragraph (6) — Air brake pipe clamps: "J" bolt type.
Section (a), Paragraph (7) — Air brake pipe clamps: "U" bolt type.
Section (b), Paragraph (7) — Brake levers: Metal badge plates.
Section (b), Paragraph (9) — Braking power: Braking ratio.
Section (c), Paragraph (11) — Couplers having 5 by 7 in. shanks.
Section (c), Paragraph (12) — Couplers, lock lift lever and toggle.
Section (u), Paragraph (4) — Class E-3 cars: Prohibition in interchange.

The matter of extension in effective date of requirement in Paragraph (a-4) of this rule has been referred to the General Committee.

Paragraph (t) (3-f) was recommended to take effect January 1, 1951, instead of August 1, 1949.

The committee recommended that Paragraph (4) of Section (f) of Rule 4 be modified to clarify the intent.

To harmonize with Car Service Rule 11, revised by the Operating-Transportation division, Paragraph (1) of Section (B), Rule 30, was modified as of January 1, 1949, by circular letter of December 31, 1948, to change the periodic re-light-weighing and restenciling of freight cars.

The addition of a new Section (g) was proposed for Rule 70 to have the delivering line assume betterment cost not chargeable to the car owner where the receiving line is obliged to apply one-wear wrought-steel wheels in place of cast-iron wheels removed on account of a cut journal on the authority of a defect card issued by the delivering line because the wheels standard to the car were not available.

Rule 93 was recommended for modification to reduce operations and to curtail expenses in billing offices.

The first two paragraphs of Rule 95 were recommended for modification to charge the car owner with the difference in value between new and second-hand material for materials lost on the line of the company making the repairs. The last paragraph of Rule 95 was proposed for change to make the repairing line entitled to betterment charges against the car owner dependent upon the type of coupler found at the other end of the car when a coupler is missing, unless the car was plainly marked to indicate the type of coupler that was lost.

The last paragraph of Rule 98 was recommended for modification to clarify the intent of billing procedure where cast-iron wheels are substituted for one-wear wrought-steel wheels.

A modification to indicate that hinged-type doors only are intended in Items 151 and 152 of Rule 101 was recommended. A new Item 172 was recommended for addition to this rule to provide charge for lubrication of center plate and side bearings (friction types only) as required by Paragraph (c), Rule 61.

A new Item 24 was proposed for addition to Section (a), Rule 108, to give a ready reference on "no charge" items.

Passenger Car Rules

Rule 2 was recommended for modification to provide for the interchange of cars with 2½-in. metallic connectors. The effective dates of Paragraphs (e) and (f) of this rule were recommended for extension from January 1, 1950, to January 1, 1951.

New instructions were proposed for addition to Paragraph (j) of Rule 7 governing the inspection, testing and replacement of armored-type brake pipe and straight-air-pipe hose.

Paragraph (2) of Section (1) was recommended for modification to provide a uniform method of designating journal-box locations on passenger cars.

Members of the Arbitration Committee are J. P. Morris (chairman), assistant to vice-president, Atchison, Topeka & Santa Fe; J. A. Deppe, superintendent car department, Chicago, Milwaukee, St. Paul & Pacific; W. N. Messimer, superintendent of equipment, Merchants Despatch Transportation Corporation; G. E. McCoy, assistant chief of car equipment, Canadian National; H. M. Wood, assistant chief of motive power (car), Pennsylvania; J. J. Root, vice-president, Union Tank Car Company; M. F. Covert, general superintendent of equipment, General American Transportation Corporation; and G. P. Trachta, general superintendent of motive power, Chicago, Rock Island & Pacific.

(The report was accepted)

Geared Hand Brakes

Up to the present time A.A.R. Certificates of Approval have been issued for 25 types of geared hand brakes,—14 vertical wheel type, 8 horizontal wheel type and 3 lever type. These are shown in the table.

Among the year's activities of the committee were a canvass of manufacturers to ascertain whether changes requiring modification of Certificates of Approval had been made in the brakes; test-rack procedure for testing geared hand brakes is being prepared; and a circular was issued calling attention to the importance of proper mating of the brake mechanism with the bell crank when one make of brake is substituted for another. Certificate of Approval of one Universal Railway Devices Company vertical-wheel brake was revised to permit the use of pressed-steel housing and back plate instead of malleable-iron castings which are hard to get. An independent manufacturer has submitted a wheel design applicable to five of the eight vertical-wheel brakes which can be used for replacements of the standard wheels, deliveries of which are slow. A circular will furnish more complete information.

Injuries to Employees

At a joint conference of the Geared Hand Brake Committee with representatives of Geared Hand Brake Manufacturers and the A.A.R. Safety Section, the hand brake manufacturers agreed to set up an engineering committee, on which each manufacturer would be represented, to consider the possibility of further standardizing features of vertical-wheel geared hand brakes to make A.A.R. Specifications more specific with respect to (1) uniformity of application (operation); (2) uniformity and ease of release; (3) non-spin wheel; (4) standardization of bell crank for use with all makes of geared hand brakes, thus providing interchangeability; and (5) uniform length of brake chain.

These features also are to be taken into consideration with reference to Specification for Horizontal Wheel Hand Brake, where applicable, and the standardization of bell crank also applies to the Lever Type Brake. It was also recommended that Specification for Lever Type Brake incorporate a requirement for a safety stop to prevent rotation of the lever beyond the release position.

To avoid confusion in identifying type of hand brake, due to interchange of brake wheels, it was suggested for consideration that manufacturer's name or type designation be omitted from all brake wheels.

Suggestion has been made to the Committee on Train Service Accidents that consideration be given to developing a standard set of instructions for operation of various kinds of hand brakes, based on instructions now in effect on certain railroads.

The members of the committee are, E. P. Moses (chairman), engineer car equipment, New York Central System; J. P. Lantelme, general foreman, Pennsylvania; H. L. Holland, assistant mechanical engineer, Baltimore & Ohio; R. G. Webb, superintendent air brakes, Chicago, Milwaukee, St. Paul & Pacific; and J. R. Jackson, mechanical engineer, Mechanical Division, Association of American Railroads.

Discussion

A member raised a question about the use of bell cranks which are interchangeable, but Chairman Moses cautioned against this practice, as the lever ratios will in many instances be changed.

(The report was accepted)

Geared Hand Brakes for which Certificates of Approval Have Been Issued

	Number by Types		
	Vertical-wheel	Horizontal-wheel	Lever type
Ajax Hand Brake Co.	1	..	..
Amer. Car & Fdy. Co.	..	1	..
Canadian Cardwell Co., Ltd.	..	1	..
Klasing Hand Brake Co.	2	..	1
Superior Hd. Brake Co.	1	2	..
The Orme Co. (Champion Brake Div.)	2	..	..
Union Asbestos & Rubber Co. (Equipment Specialties Div.)	1	1	1
Union Railway Equipment Co.	1	1	..
Universal Railway Devices Co.	5	2	1
W. H. Miner, Inc.	1	..	..
Total	14	8	3

Prices for Labor and Materials

T. J. Boring
Chairman

To provide an equitable basis for inter-road billing, the committee continued the work of analyzing material, labor and new equipment costs in freight rules 98, 101, 107, 111 and 112, and in passenger rules 21 and 22 to determine and recommend changes to be made in the next supplement of the current code.

All miscellaneous material prices in Rule 101 were rechecked as of March 1, 1949. The note following Item 107-C is modified to include parts for geared hand brakes and is relocated to follow Item 107-G. All combination labor and material allowances were modified in Supplement No. 1 to the 1949 Code, effective May 1, 1949, to conform with revised A.A.R. labor rates brought about by an increase in hourly wage rates.

A new Item 19-A is added to Rule 107 to provide a charge for the application of a brake-hanger-bracket bushing, wear plate, or securement detail, for loop-type brake hangers. Upon announcement of the 7 cents increase in hourly wage rates, Item 92 covering freight-car labor was increased to $2.35 per hour and key items in this rule reviewed and modified accordingly.

All combination labor and material allowances in Rule 111 were also modified in Supplement No. 1 to the 1949 Code, effective May 1, 1949, to conform with revised A.A.R. labor rates brought about by the 7 cents increase.

Item 15—Cleaning, lubricating and repairing AB freight brake equipment—is increased from $16.08 to $20.43. Item 15A—Cleaning, lubricating and repairing AB-1-B freight brake equipment, including all operations in Item 15, plus those required on additional portions of this brake—is increased from $25.21 to $31.29.

Recommendations in Rule 112 were made respecting reproduction pound prices of new freight cars of all classes, in order that Supplement of August 1, 1949, may reflect 1948 costs in lieu of figures shown in the present Code. New prices recommended are based on the cost of 72,501 freight cars constructed during the year 1948. Prices covering special allowances in Paragraph 9 (c) are modified to conform with present costs for such installations.

Passenger Car Rules

Items 19, 19-A and 20 in Rule 21 covering passenger-car labor were modified. All combination labor and material allowances were later reviewed and modified in Supplement No. 1 to the 1949 Code, effective May 1, 1949.

In Passenger Car Rule 22, the table of passenger-car axles is modified to include axles designed for roller bearings, a new Note 1 added and the present note modified and relocated as new Note 2. Passenger-car axles designed for roller bearings, and those designed for friction bearings are combined in one table. All combination labor and material allowances are modified in Supplement No. 1 to the 1949 Code, effective May 1, 1949.

A number of Items in Rule 111 and P.C. Rule 21 covering various operations on different types of air brakes were assigned to a special subcommittee for field studies to determine if the allowances therefor are in line with present costs. Included in this group are Items 15 and 15-A of Rule 111.

The committee intends again to review the A.A.R. labor rates and the combination items in the Price Rules which include labor, early in July, for the purpose of making adjustments which will be necessary on September 1, 1949, because of the 40-hour work week. To meet this situation, the secretary will prepare Supplement No. 2 to the 1949 Code of Interchange Rules early in July, for distribution prior to August 1.

For the advance information of all concerned, the revised A.A.R. labor rate for work on freight cars, effective September 1, will be $2.80 per hour. The A.A.R. freight-car hourly labor rate as of September 1, 1949, will be increased 45 cents per hour, or 19.15 per cent. Other labor rates are established by using the same percentage increase as obtains in the freight-car hourly labor rate, using the nearest multiple of five to actual result so obtained.

Revised labor rates to become effective on September 1, 1949, will be $2.80 for Items 92 and 194 of Rule 107, and $3.20 for Item 195. For Passenger Car Rule 21, the revised rates will be $2.25 for items 19 and 19-A, and $3.10 for Item 20.

The committee intends to investigate labor and material costs again in October and if sufficient change develops, necessary revisions will be made and inserted in the Rules, effective January 1, 1950.

The committee recommended material price modifications in Section (i-1) of Rule 98, in numerous items in Rule 101, in Item 19-A of Rule 107, in certain per-pound reproduction costs of Rule 112 and in special allowances Paragraph 9 (c), Section B of Rule 112. The committee also recommended a number of material-price modifications in Passenger Car Rule 22, also that the table of passenger-car axles be modified to include those designed for roller bearings, that a new Note 1 be added, and that the present note be modified and relocated as new Note 2.

The members of the committee on Prices for Labor and Materials are T. J. Boring (chairman), general foreman, M. C. B. Clearing House, Pennsylvania; P. F. Spangler, (vice-chairman), assistant superintendent motive power, St. Louis-San Francisco; J. D. Rezner, superintendent car department, Chicago, Burlington & Quincy; L. B. George, assistant chief motive power and rolling stock, Canadian Pacific; G. J. Flanagan, general car inspector, New York Central; J. J. Root, Jr., vice-president, Union Tank Car Company; A. H. Gaebler, superintendent car department, General American Transportation Corporation; and G. R. Andersen, superintendent car department, Chicago & North Western.

(The report of the committee was accepted.)

Specifications for Materials

H. G. Miller
Chairman

The committee recommended that changes and revisions be made, or that new specifications be adopted, for the following numbered items and submitted to letter ballot: M-101, M-111, M-112, M-116, M-126, M-127, M-129, M-130, M-601, M-609, M-610, and M-613. Two changes were made by emergency action of the General Committee in Specifications M-107, and these became effective March 7. In specifications M-402 on malleable iron castings, the committee requested that the A.A.R. committees having jurisdiction over equipment designs give consideration to the most desirable grade of malleable castings for railroad use; the grade adopted is not available from a large number of suppliers.

Three railroads and three producers are cooperating on tests of light aging of rubber, which to date have indicated the superiority of Neoprene. Since most hoses fail from mechanical damage rather than light aging, the committee does not feel that the additional cost of Neoprene is warranted except under special conditions.

The committee unanimously adopted the following standard rejection clause, which will be uniform for all specifications written or revised subsequent to this action:

"Material which shows injurious defects subsequent to its original inspection and acceptance at the manufacturer's works or elsewhere will be rejected, and the manufacturer shall be notified."

The committee gave consideration to the preparation of specifications for Diesel crank-case oil but no agreement was reached on the proper approach to the subject. However, a study of the subject indicated the necessity for continued effort and the matter will be given further consideration.

Firebox and Boiler Steels

The cooperative research program to determine the effect of residuals on the quality and performance of firebox and boiler steel was continued. The total number of samples received represent 36 fireboxes and 32 boilers. Member railroads are requested to submit additional specimens from boilers and fireboxes which have given extended service—25 years or more, if possible. The life range of samples now available is from 1½ years to 31 for boiler steels and from 8 months to 35 years for fireboxes.

In addition to complete analysis and micro examination of cracks, eight samples have been analyzed for gas content. There was only the slightest difference in gaseous content of steels that have had excellent to poor service life.

Additional samples are needed to extend the data available for semi-killed and alloy steel, so that the variations in residual alloys can be more accurately compared with service life. The steel manufacturers are now completing their studies on the effect of physical properties.

The committee recommended that study and program be continued.

The members of the Committee on Specifications for Materials are : H. G. Miller (chairman), mechanical engineer, Chicago, Milwaukee, St. Paul & Pacific; W. F. Collins (vice-chairman), engineer of tests, New York Central; T. D. Sed-

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Discussion

E. K. Bloss, mechanical engineer, Boston & Maine, asked if the committee has given any consideration to a change in the material specifications for forging steel to limit the copper content, as copper causes difficulty in forging. Chairman Miller answered in the negative and said that if any member road has information which it can back up, bearing on necessary copper limitations for successful forging, the committee will appreciate receiving it.

(The report was accepted and recommendations referred to letter ballot)

Couplers and Draft Gears

In the report of this committee were 13 items on couplers, of which seven called for letter-ballot action, and five items on draft gears, none of which require letter-ballot action.

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Type F Freight Coupler.—The Type F interlocking coupler and attachments have been applied experimentally to three Pennsylvania box cars and three New York Central hopper cars in general service. Operating reports and inspections have shown very satisfactory performance. Complete laboratory tests have been made. The committee has author-

H. W. Faus
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Canadian-Built Certified Gears.—After check tests made in 1944-45 had revealed some conditions which needed correction, on certified draft gears of Canadian Manufacture, the committee has arranged to take samples of the present product of each Canadian manufacturer, selected at random from car builders' or railroad stocks. These will be sent to the A.A.R. laboratory at Purdue University to test for specification requirements. The results will be reported in detail to the Canadian member roads and a general statement of results included in the next annual report of the committee.

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W. J. Gabel, Jr., mechanical engineer, Elgin, Joliet & Eastern, asked if the committee had any information or recommendations regarding the use of rust preventatives on coupler knuckles, bottom rods, etc., and the answer was that lubrication is taboo, but no action has been taken regarding rust preventatives.

(The report was accepted and recommendations referred to letter ballot)

Brakes and Brake Equipment

The committee reported on 11 subjects and listed 12 additional items which are now under investigation.

Cleaning Experimental AB Brakes.—All reports are in and tabulation is under way.

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Instructions issued in July, 1948, to reduce excessive winter brake-pipe leakage are being amplified and a subcommittee will cooperate with gasket manufacturers in cold-room tests.

A number of synthetic rubber gaskets applied during the war are still in service which fail during cold weather. To insure the removal of these parts from service the Arbitration Committee has been requested to add a new note to Section 1 of Interchange Rule 60 which requires that certain AB brake gaskets are to be renewed, regardless of condition whenever the brakes receive periodic attention, and to continue it in effect until the committee is positive that gaskets are available which are capable of satisfactory performance for more than the 36-month cleaning period.

AB Load-Compensating Brake.—The Pennsylvania Saug Hollow Branch tests of July and August, 1948, disclosed modifications in the load-compensating brake equipment which it is believed will improve service performance. These changes are being worked out with the air-brake manufacturers and may lead to further tests.

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J. P. Lantelme
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Cleaning Period for D-22 Control Valves.—Final reports of service tests of D-22 control valves to determine if the cleaning period can be advanced beyond 15 months, have been tabulated. Since the time the test cars were sealed and placed in service the amount of moisture and oil getting into the brake pipe and valves has been reduced, due to improvement made in the main reservoir cooling system and compressor operation on Diesel locomotives. Therefore, if these cars were tested under present day conditions no doubt the number of premature failures and test-rack failures would be reduced.

Based on the results of these tests, and due to the improved maintenance of this type of brake equipment and improvements that are being made to the main-reservoir air system on Diesel locomotives, it is recommended, as a ballot item, that the air-brake cleaning period for cars equipped with D-22 type control valves be established as 24 months.

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Discussion

W. F. Peck, supervisor air brakes, Baltimore & Ohio, questioned the advisability of scrapping certain AB brake parts and gaskets, as recommended by the committee, and requested permission to reuse any parts shown by test to be satisfactory. He stressed the need for greater standardization of air brake equipment on Diesel locomotives and urged more general use of the four-position release-control retainer on freight cars.

Prepared discussions were presented by G. H. Higley, general air brake instructor, Erie, and E. K. Bloss, mechanical engineer, Boston & Maine, speaking for R. E. Baker, assistant general manager. The latter said that pipe failures are being reduced by the use of Wabcoseal-type fittings; that the cleaning period of the D-22 brake equipment should be extended to 24 months; that an early recommendation for cleaning period of U. C. equipment is needed; and that early action is required looking to elimination of oil and moisture from Diesel locomotive air lines.

F. G. Moody, superintendent car department, Union Pacific, said that gasket trouble in AB equipment is serious under severe winter conditions, often necessitating reduction of train length in order to get under way, and yet these valves show up properly on the test rack at normal temperatures. This opinion was concurred in by R. G. Webb, superintendent of air brakes, Milwaukee, who stated that the four caps on AB valves can distort as much as .010 in. under extreme low temperatures and improper tightening.

C. D. Stewart, Westinghouse Air Brake Company, said that the brake companies attempt to give railroads what they want in the way of equipment; the D-24-RL brake for Diesel locomotives may be assembled in 200 different piping variations, all of which are requested by one or more customers. He is in sympathy with retaining all gaskets which seem to be serviceable and explained that synthetic gaskets, now giving trouble, were the only kind available during the war. He advocated a gage for condemning gaskets on a thickness basis.

(The report was accepted)

Revision of Loading Rules

This year's report on loading rules was divided into two sections. Section A covered completed items which have been placed in line for inclusion in the Supplement scheduled to be issued about July 1, 1949. Section B covers items still under consideration.

Section B Items

The following 15 subjects are still under consideration, some of which require only revisions in the present specifications and figures, while others require the formulation of new specifications and figures:

1 on Forest Products . . .
Poles
7 on Steel Products . . .
Structural steel shapes and rods; bars; sheets; plates; pipe; tanks; slabs and billets.
1 on Machinery . . .
Revision of Machinery Supplement.
1 on Farm Machinery . . .
Gas-type engines; threshers; combines; hay balers; etc.
3 on Marble & Clay Products . . .
Marble; pouring channels; clay sewer pipe.
1 on Automotive Products . . .
Trailers.
1 on Grading & Road Making Machines . . .
Bulldozers; scrapers; rollers; tractor-graders; etc.

The preparation of specifications and drawings to cover the loading of farm machinery, such as threshers, combines, hay balers, gas-type engines, etc., and those to cover the loading of grading and road making equipment, is progressing satisfactorily, and will be issued as a separate pamphlet upon completion.

W. B. Moir
Chairman

The revision of the Machinery Supplement is being held in abeyance pending joint conference with the Operating-Transportation Division to coordinate details pertaining both to open and closed car loading, and will be issued in the near future. The other open subjects are being progressed by the various subcommittees, and will be included in the published rules upon completion.

The members of the Committee on Loading Rules are:

W. B. Moir (chairman), chief car inspector, Pennsylvania; C. J. Nelson (vice-chairman), superintendent interchange, Chicago Car Interchange Bureau; T. W. Carr, superintendent rolling stock, Pittsburgh & Lake Erie; A. H. Keys, superintendent car department, Baltimore & Ohio; G. D. Minter, district car inspector, Norfolk & Western; H. S. Keppelman, superintendent car department, Reading; G. R. Andersen, superintendent car department, Chicago & North Western; H. H. Golden, supervisor A.A.R. Interchange & Accounting, Louisville & Nashville; H. J. Oliver, assistant superintendent motive power, Detroit, Toledo & Ironton; F. A. Shoulty, assistant superintendent car department, Chicago, Milwaukee, St. Paul & Pacific; F. Fahland, mechanical engineer, Union Pacific; L. E. Day, district master car repairer, Southern Pacific; and L. T. Donovan, supervisor of A.A.R. Loading, A.A.R.

Discussion

Chairman Moir stated that the committee has met with shippers of iron and steel products, farm equipment, lumber, road grading equipment and machine tools, exceptionally satisfactory results being secured by sitting across the table and dealing directly on mutual problems.

Since new army equipment has been developed and is beginning to move in quantity again, the rules in Supplement No. 2 will have to be revised and reissued. Revised lumber loading rules, securing the top lift, have produced good results and shippers are apparently satisfied. There are still too many failures, however, due to loads shifting and falling off open-top cars, so carriers are urged to provide more critical inspection at originating points, as well as en route, and, wherever possible, to appoint a competent man on each road to follow up loading procedures, serve as a contact man between the railroad and shippers and secure closer adherence to approved loading rules and practices.

With regard to the proposed deletion of Rule 101 covering the loading of 42-in. wheels in carload lots from manufacturers for shipment abroad during the last war, a member asked if this rule cannot be used for the loading of Diesel locomotive wheels which now have to be handled in considerable quantities. Chairman Moir replied that most railroads have their own special cars for this purpose, but the committee will investigate the matter further.

(The report was accepted)

Lubrication of Cars and Locomotives

Since the 1948 annual report continuance of the studies of roller bearing lubricants has been progressed at the Indianapolis Lubrication Laboratory under the general direction of the mechanical research office. These studies, continuing through January, 1949, include both oil and grease lubricants used with six different 5½-in. by 10-in. railway roller bearing assemblies.

Chart recordings of speed, temperatures, torque, and power input are made for each run and recordings of essential and pertinent data made on log sheets at designated time-distance locations on the H-C (hot-cold) Schedule. The third progress report covering this roller bearing lubricant research program is in preparation by the mechanical research office.

At the October, 1948, meeting, based on a memorandum dated December 15, 1948, from the mechanical research office, the committee recommended requirements for the lubrication of journal roller-bearing units on freight and passenger equipment cars to the Arbitration Committee for incorporation in Paragraph (j) of Rule 66-A. These recommendations were approved by the Arbitration Committee.

Further studies of grease type lubricants at the Indianapolis laboratory have been authorized.

Oil and Waste Research.—The research program mentioned in the 1947 annual report has been approved and is being progressed at the Indianapolis lubrication laboratory as a budget-item project under the general direction of the mechanical research office through a resident representative stationed at the laboratory.

During the year representative samples of waste threads commercially available for journal packing and waste mixtures, as recommended by several journal-packing waste manufacturers, have been assembled, purchased from six representative waste manufacturers.

After study of the problem of a comparison and evaluation of the types and mixtures of waste threads, it was decided that the dynamic approach offered the best means for developing the essential facts under comparable conditions. By reason of the variety and number of thread types and mixtures, along with the possible variation in the oils making up the packings to be compared and evaluated, it was decided to construct a four-spindle (8 half-size 2¾-in. by 5-in. journals) testing machine to be utilized as a screening medium preliminary to final tests of the most promising waste-oil packing combinations on the full-size testing machine.

The temperature control room at the Indianapolis Lubrication Laboratory is utilized, both for the screening tests on the half-size machine and for the final tests on the full-size machine, to study the behavior of the packings over a wide range of atmospheric temperatures.

Progress reports covering these laboratory studies of lubricating media and materials will be issued by the mechanical research office from time to time as the data become available.

Journal-Box Lids.—To clarify the intent that designs of journal-box lids of deep-flange type are permissible under Specification M-120, the secretary has been instructed to modify Paragraph 4(b) in the next issue of revised manual pages.

Up to the time this report was sent to press, the following makes of lids have been formally submitted, tested, approved and been awarded Certificates of Approval: (The committee here listed a total of six American Locomotive Company journal box lids, two Davis Brake Beam lids, four Motor Wheel Corporation lids, three National Malleable lids, three Symington-Gould lids, and two Union Spring & Manufacturing Co. lids, 5-in. by 9-in., 5½-in. by 10-in., also 6-in. by 11-in. lids being specified.)

The matter of reclaiming journal box lids should be the responsibility of each individual railroad, with due consideration to the economies involved, and such reclamation should not be prohibited, the report stated. It is understood that these reclaimed lids will meet current Specification M-120. However, if applied to foreign cars, charge will be restricted to 50 per cent of gross value new, less credit for part removed, as provided in Interchange Rule 104.

Service tests of various combinations of journal-box closures, journal boxes being operated in similar service with various lid closing pressures, with and without dust guards, and also with and without auxiliary devices such as deflecting strips and hooded extensions, are still in progress.

Periodic Journal Box Attention.—Recommendation for reduction in the time limit for periodic attention to journal boxes, in an effort to improve the hot-box performance, has been given careful consideration. It is the committee's firm belief that the answer to hot box prevention lies along the lines of close supervision and good workmanship in servicing journal boxes rather than changing the date limits.

Hot-Box Statistics Renewed.—Effective January 1, 1949, the General Committee directed that information again be collected covering number of freight cars set off between division terminals on account of hot boxes and number of miles run per hot box set off. While this basis will not permit comparisons between a high-speed multiple-track railroad and a light-traffic railroad, it will afford a comparison by each railroad with its own former performance.

Lubrication Manual.—It is suggested the proposed Lubrication Manual be included in the 1949 annual report, with recommendation that it be submitted to letter ballot for adoption as standard practice to supersede present Standard Method of Packing Journal Boxes as shown on pages L-35 to L-36B in the A.A.R. Manual of Standard and Recommended Practice, as well as the following: Page L-91 Specifications for Packing Tools for Journal Boxes; page L-92 Packing Iron and Packing Hook Drawings; page L-92A—Standard Inspection of Journal Boxes; page L-93 Passenger Car Lubrication; page L-94 Standard Method of Reporting Hot Boxes.

Based upon reports from the A.A.R. Mechanical Inspection Department that numerous cases are being found where system cars are being outshopped and otherwise released for service though long overdue for, and very much in need of, journal-box attention, it is suggested that the Arbitration Committee consider a rule to prohibit the interchange from car owner of empty cars overdue for periodic journal-box attention.

It is suggested that the Committee on Specifications for Materials consider a requirement for winter thinner or cutback oil, to be added to Spec. M-906.

The members of the committee are R. E. Coughlan (chairman), chief metallurgist and engineer tests, Chicago & North Western; E. H. Jenkins (vice-chairman), assistant general superintendent car equipment, Western Region, Canadian National; E. C. Ellis, superintendent car department, Chesapeake & Ohio; A. J. Pichetto, general air brake engineer, Illinois Central; W. G. Aten, mechanical inspector in charge of lubricating matters, Chicago, Burlington & Quincy; D. C. Davis, lubrication supervisor, Atchison, Topeka & Santa Fe; M. A. Pinney, engineer of tests, Pennsylvania; H. T. Rockwell, assistant engineer, New York Central.

Discussion

Written discussions were submitted by A. J. Pichetto, general air brake engineer, Illinois Central, J. A. Deppe, superintendent car department, Milwaukee; P. F. Spangler, assistant superintendent of motive power, Frisco; F. G. Moody, superintendent car department, Northern Pacific; and L. J. McLain, traveling car inspector, Delaware & Hudson.

Some of the points stressed were that lubrication materials and waste are still not up to desired standards; that many car owners are not doing their share of journal box packing and possibly should be requested to report progress quarterly or semiannually to the A.A.R., that the definition of a hotbox, given in the report, is not satisfactory; and that pertinent instructions and the new lubrication manual should be more widely distributed to car supervisors.

In connection with hotbox statistics mentioned in the committee's report, action was taken at a meeting of the General Committee, June 26, to defer

reinstatement of these statistics in view of the urgent necessity of curtailing rather than expanding clerical work under present conditions.

R. W. Seniff, engineer of tests, Baltimore & Ohio, said railroads must change their thinking on Diesel locomotive lubrication and the best backlog of practice is in the hands of automotive engineers.

J. A. Welsch, superintendent of equipment, Illinois Central, said that this road has been mixing Diesel oils without ill effect and he thinks it is the sales representatives rather than technical men of oil companies who say it shouldn't be done.

(The report was accepted and recommendations referred to letter ballot)

Report on Wheels

This year's report dealt with 13 subjects which have been handled by the committee in the past year.

The change, approved by letter ballot, in Section 9 (a) of Specification M-403 necessitated a change in Fig. 66-A and Paragraph 77 of the Wheel and Axle Manual referring to the depth of chill in cast-iron wheels.

A correction was approved in the table of standard freight-car axle dimensions in the Manual as to the manner of using A, B, C and D axles with 1947 design cast-iron wheels.

Permission has been granted to cast present A.A.R. standard wheels with new chillers to give tread contour of A.A.R.-X-1 wheel. Also, the committee reported that it did not recommend standardizing the hollow bore of A.A.R.-X-1 wheels until more shop experience had been accumulated.

No action was suggested on a recommendation to prohibit the remounting of second-hand single-plate bracketed cast-iron wheels cast prior to 1942. The subject is continued.

A reduction in carbon content has been approved for Class A heat-treated steel wheels (Specification M-107) as an emergency measure and a joint committee from the division and manufacturers is to study the possibilities of eliminating thermal cracking on passenger-car wheels; also to investigate causes of Diesel wheel failures.

At the request of the Arbitration Committee this committee clarified the rules with respect to cast-iron, one-wear and multiple-wear wrought-steel wheels having holes drilled through the plate and recommended that Section 10 (a) of Specification M-107 and Section 8 of Specification M-103 be modified by the addition of a sentence specifying the manner in which test holes may be drilled in the wheel plate.

The committee recommended, as a letter ballot item, increasing the dimension *G* of the AX-36 and BS-36 design wheels shown in Section G of the Manual from 2½ in. to 2¾ in. without change in dimension *D*. This was done to provide ¼ in. additional tread metal and to make the normal inside rim diameter conform to the one-wear designs.

E. E. Chapman
Chairman

The committee recommended the continuance of wheel design CX-38 in the Manual in spite of a prior recommendation that it be withdrawn.

Minor editorial changes have been approved in connection with Manual sheets referring to wheel design CX-40 and AX-44. Item 8 on Sheet G-27 will be changed to incorporate these corrections.

Page B-44-C of the Manual will be changed to show sufficient dimension details of the alternate mounting and check gage for cast-iron, one-wear wrought- and cast-steel wheels to permit proper manufacture of the gage.

Paragraphs 135 and 354 (C) of the Wheel and Axle Manual will be revised to read, "The bearing points of the chuck jaws must be maintained *within a tolerance of .015 in. to a plane,* at right angles to the axis of the boring bar *and within a tolerance of .004 in. of being concentric with the boring bar.*" This is a letter-ballot item.

The committee recommended the use of portable home-made magnetic testing devices, developed by some railroads, at outlying points where the volume of axle testing is not sufficient to justify the installation of more elaborate equipment.

The committee having specified the proportions of wheel-mounting compounds indicates that it has no objection to the use of ready-mixed compounds secured in the open market where the commercial product complies with the specified proportions.

The chart showing wheel mounting pressures (Fig. 115, Wheel and Axle Manual) has been rearranged so that the shop man may read the pressures direct from the chart without calculation.

Appendix A of the report included the new Section XXI of the Wheel and Axle Manual on recommended practice for the maintenance and lubrication of roller bearings. This addition to the manual consists of the following subdivisions: (1) Description, mounting and removal of roller bearings, covering the Fafnir-Waugh twin bearing, Hyatt bearings, Timken-standard and quad bearings and the S.K.F. pressed-on and tapered-sleeve types. Complete descriptions and drawings of these types are included; (2) General instructions relating to roller bearings for handling and storage; (3) Periodic lubrication inspection; (4) Attention to roller bearings when cars are in service; (5) Attention to roller bearings when wheels are reconditioned without dismounting; (6) Attention to roller bearings when cars are in the shop for major repairs or when wheels are dismounted; and (7) Lateral adjustment, including a table showing the lateral adjustment for the principal railway types of roller bearings.

The members of the committee on Wheels are E. E. Chapman (chairman), mechanical assistant, Atchison, Topeka & Santa Fe; H. H. Haupt (vice-chairman), general superintendent motive power, Pennsylvania; I. N. Mosely, research and test engineer, Norfolk & Western; M. S. Riegel, assistant engineer of tests, New York Central; H. E. Wagner, superintendent car department, Alton & Southern; G. A. Harstad, foundry metallurgist, Chicago, Milwaukee, St. Paul & Pacific; A. M. Johnsen, engineer of tests, Pullman Company; W. R. Hedeman, engineer of tests, Baltimore & Ohio; P. V. Garin, engineer of tests, Southern Pacific; and B. C. Gunnell, chief mechanical engineer, Southern.

Discussion

Chairman Galloway called for discussion by manufacturers' representatives and C. M. Stoner, Association of Manufacturers of Chilled Car Wheels, said that it was unfortunate that difficulties arose in boring the A.A.R. X-1 cored-hub wheel, adopted to obtain better metal distribution and get away from the heavy mass of metal in the hub itself. On June 1, 181,000 of these wheels had been shipped to railroads and car builders. Several shops have bored and mounted thousands of X-1's, and, while some had

trouble at the start, this was overcome relatively soon. Reports of difficulties were no doubt based on experience with small groups of wheels. Research has resulted in the development of a cast wheel with radically different metallurgical properties from present wheels with a chilled tread, and some have over 100,000 miles in test. Thorough consideration is also being given to developing exceptionally high-strength cast iron by means of magnesium additions.

C. B. Bryant, Wrought Steel Wheel Industry, said that the reduction in maximum carbon content of Class A wheels from 0.63 per cent to 0.57 per cent to reduce thermal cracking was almost enough to make the Class A a different wheel. The change was largely necessitated by higher speeds, higher braking ratios, and by the use of four-wheel trucks which have wheel loads around 20,000 lb. compared to 15,000 lb. on the old six-wheel trucks. With less carbon there should be less thermal cracking, but there will also be shorter life, and an economic balance will have to be reached as to the most desirable carbon content.

On one group of 60 cars in identical service, 950 pairs of wheels were changed because of thermal cracks. A group of the five worst cars averaged 34 pairs changed, while the five best averaged only 6 pairs. In another group of 20 cars and two trains, 350 individual wheels were changed in six months. The four best cars averaged one wheel change each, while the four worst averaged 31. Part of the trouble is a result of mechanical conditions, such as overhanging shoes which contact only 1½ in. of wheel tread. Where new and old equipment are mixed, the new equipment wheels get the heaviest wear due to the heavier wheel loads.

H. H. Lanning, mechanical engineer, Santa Fe, called attention to Fig. 149 on page 14 of the printed report, relating to a collar shrunk on the axle end in a Timken roller bearing application, and said the figure should be either corrected or omitted. M. S. Downes, Timken Roller Bearing Company, said this design is no longer supplied. He urged increased attention to prescribed roller bearing inspection and maintenance practices.

Vice-Chairman Brown said that rolled steel wheel failures in recent months have been serious on the Southern Pacific, as well as other roads, and the wheel manufacturers have a big job to do in producing better wheels which will have desired wearing properties and yet not be subject to thermal checking.

(The report was accepted and recommendations referred to letter ballot)

during the period March 1, 1948, to March 1, 1949, is shown as Appendix B. [This records 26 true hot-box indications, of which four were on steam locomotives, two on Diesel locomotives and one on each of 20 passenger-train cars.—EDITOR]

The committee was advised that the Southern Pacific had been experimenting with the Journ-A-Larm system, manufactured by Fenwal, Inc. One chair car equipped with this system went into service in March, 1948, three baggage-mail cars in November and December, 1948, and three baggage cars in December, 1948, and January, 1949.

Some trouble was experienced with the original installation on the chair car due to broken conductors in the Thermoswitch to truck cables. No trouble has been experienced with the systems as installed on the six new head-end cars recently placed in service, with the exception of one false alarm, cause unknown. These devices are set to operate at 260 deg. F plus or minus 10 deg. F.

The Southern Pacific has 71 sleeping cars and 108 chair, dining, lounge and other cars on order which will be equipped with the Fenwal system.

J. R. Jackson
Chairman

Development of Hot Box Alarm Devices

During the past year the Committee on Development of Hot Box Alarm Devices has continued to review additional devices submitted by individuals and manufacturers, but none submitted was considered to have sufficient merit, or developed to a point where laboratory tests were warranted. As during the previous year, the principal activity of the committee was to continue observations of the four devices undergoing road service tests as installed in solid-bearing-equipped passenger cars in regular service on the Pennsylvania. The table shows the total results of these tests.

Service Experience Reports

The committee has again been furnished with the road experience of the New York Central System during the past year with the Twin-Plex alarm, which is now standard equipment on that railroad for all modern locomotives, both passenger and freight, and all of the newer passenger cars, numbering approximately 800; also on more than 2,000 of the older passenger cars. The Pullman Company has equipped all roller bearing cars assigned to New York Central System service with the Twin-Plex alarm, as well as 1,200 bearings on the older Pullman cars having solid bearings. The New York Central reports that during the past year no burnoffs have occurred of axles having bearings so equipped. Detailed report from the New York Central System covering the service record with the Twin-Plex alarm

TOTAL RESULTS TO MARCH 31, 1949, OF ROAD SERVICE TESTS ON THE PENNSYLVANIA

Alarm equipment	months	True Indications	False alarms	Possible false Indications	Failures	Equipment defects
Minneapolis-Honeywell	34*	15	16	2	2	15
Union Switch & Signal	40	5	15	3	2	11
Pennsylvania Cartridge	34	11	16	1	2	13
Magnus Metal Twin-Plex	28	0	1	0	v	1

*Service test of Mnneapolis-Honeywell device closed as of October 25, 1948, at which date device was removed and returned to manufacturer.

Economic Justification

At the January 19, 1949, meeting of the committee the status of its activities was outlined as follows: The committee was not convinced as to the economic justification of the relatively expensive electric type hot box alarm device applicable to passenger cars only. Its ultimate objective is the development of a relatively simple, effective, and reliable device, applicable to both passenger and freight equipment cars and to both solid and roller type journal bearings. The committee intends to continue its efforts to encourage some individual or organization to design or develop such a device.

The members of the committee are J. R. Jackson, (chairman), mechanical engineer, Mechanical Division, A.A.R.; M.

A. Pinney, engineer of tests, Pennsylvania; H. L. Holland, assistant mechanical engineer, Baltimore & Ohio; J. Stair, Jr., electrical engineer, Pennsylvania; H. T. Rockwell, assistant engineer, New York Central System; and L. H. Sultan, electrical engineer, Southern Pacific.

(*The report was accepted*)

Car Construction

The committee reported that of 33,905 box, auto-box and hopper cars ordered during the year ended April 30, 1949, 7,200 hopper cars were not of A.A.R. design and the remaining 26,705 were A.A.R. throughout or conformed thereto in most characteristic details, with variations for lightweight alloy-steel, floating center sills, and inside dimensions to meet specific conditions. Of 49,679 cars of all types, including gondolas, flat, ballast, stock, refrigerator and special types of cars ordered during the same period, 95.55 per cent have the standard center-plate height of 25¾ in.

Approval of New Freight Designs.—During the year ended April 30, 1949, the committee approved for interchange service, according to the first paragraph of Interchange Rule 3, eight new freight-car designs of untried types, from which a total of 394 cars are to be built.

Variations from Conventional Freight Designs.—The committee has been advised by the secretary of the division of 11 cases of variations from conventional designs involving 9,605 cars for eight railway or private car owners. These do not constitute "untried designs" under Rule 3 and are submitted to the secretary for inclusion in his files as a matter of record.

Standardization.—The General Committee of the Mechanical Division directed the Committee on Car Construction and the Committee on Passenger Car Specifications to consider greater standardization of passenger cars with the Committee on Car Design of the American Railway Car Institute. Study is now being made by the Committee on Car Design.

The A.A.R. made a check of new freight equipment being built. It was found there was considerable variation between standard drawings now shown in the Supplement to the Manual and cars built for the various railroads. Some of the railroads follow A.A.R. Standards closely, but others deviate in general dimensions of the car as well as in a number of details. The Committee on Car Construction directs attention to the importance of building and maintaining standard cars, thereby reducing initial costs, expediting delivery schedules and simplifying and reducing cost of inventories of repair parts.

A study is being made of a list of details which the A.R.C.I. proposes as improvements over the construction now shown in the Supplement to Manual which would increase production and reduce cost.

Two changes are proposed for submission to letter ballot:

(1) Eliminate the 7-ft. doorway for box and autobox cars from both 40-ft. 6-in. and 50-ft. 6-in. cars. This is seldom used and, where used, the 8-ft. opening can be used in future.

(2) Revise hopper-car drawings (both 50-ton and 70-ton) in the Supplement to Manual to show body bolsters consisting of 68-lb. I-beams in place of the built-up construction now shown.

Trucks for High-Speed Freight Service.—During 1948 the cooperative research program with the freight truck and snubber manufacturers under the general direction of the A.A.R. Mechanical Research Office was approved and a series of road tests made on the Illinois Central out of Clinton, Ill. The completely instrumented five-car service laboratory, as built for American Steel Foundries for its research activities, was leased and A.S.F. trained technical personnel, augmented by A.A.R. personnel, was employed.

During the period between July 27 and November 13, 1948, a total of 78 road tests were run, recording the vertical and lateral shocks within one car equipped progressively with various truck bolster springs, unit snubbers, package snubbers, and special designs of freight trucks, as compared with a duplicate car under which one set of trucks was maintained throughout the test program.

This road-testing program was not completed during 1948, but it is to be continued during 1949 to complete tests of other snubbers and truck designs, and to include trucks having roller-bearing journals for comparison with the conventional solid-type bearings under the test train during the 1948 tests.

A preliminary summary report tabulating the results of the 1948 road tests completed with the all-coil (four) bolster truck-spring arrangements or combinations, unit snubbers (seven), package group snubbers (four), and special truck designs (seven) accompanied the report.

Side-Frame Clearance.—The subcommittee recommends that the dimension of 29¾ in. maximum from top of rail to the top of side frame for trucks with a center-plate height of 25¾ in., as now shown on Manual page D-12, remain unchanged and that a dimension of 4⅞ in. minimum from top of rail to bottom of side frame be added.

To obtain sufficient clearance between the body bolster and the A.A.R. standard side frame with a maximum height of 29¾ in. when using 3 11/16-in. travel springs, it will be necessary to decrease the depth of the present body bolster. When using proprietary designs of side frames having 28¾-in. height with long-travel springs, the present A.A.R. bolster design may be used without fear of interference.

Side Frames and Bolsters.—During the year since the last report approvals have been granted to 228 additional designs of side frames and 226 additional designs of bolsters for use in interchange service. The joint subcommittee calls attention to the fact that 505 designs of side frames and 523 designs of bolsters have now been approved for interchange service. Duplication results from the assignment of separate numbers to similar designs when submitted by two or more manufacturers but, with allowance for this, the subcommittee believes the number is larger than necessary. The railroads are reminded that standardization to the greatest practicable extent will effect savings for all concerned. This is not to discourage improvements in design but to discourage perpetuation of old unapproved designs for which improved substitutes are available.

The manufacturers are advised that, while a backlog of approval tests still exists, this is now due to delay in supplying specimens for test. Both dynamic fatigue testing machines have been idle for substantial periods recently. Manufacturers are advised to file applications and schedule tests in advance of their requirements, then furnish specimens promptly, and thus avoid costly delays.

Helical-Spring Service Tests.—Service-life tests of helical springs of various deflections from 1⅝ in. to 2½ in. are being followed closely by the sub-committee. The springs being tested and the test designations are:

A.A.R. 1936 springs, 1⅝-in. travel	T-1
Proposed 1944 springs, 1⅝-in. travel	T-2
2-in. travel springs	T-3
2½-in. travel springs	T-4

Tests had run about 38 months at the end of March, 1949. Failures during the first 26 months and after 38 months and a comparative index of failures of outer coils, based on those in test T-1 as unity in relation to the relative number of coils in service, are shown in the table.

In August, 1948, five of the 10 cars equipped with Class T-4 springs were fitted with Symington-Gould FLS snubbers. From September 1, 1948, to April 1, 1949, two outer coils failed on one car. On the remaining five cars equipped with Holland Type E snubbers, five outer coils failed, one on each of five cars. No definite conclusions or recommendations will be formulated until the test has progressed further or has been terminated.

PROGRESS OF HELICAL-SPRINGS SERVICE TESTS

Springs	No. of failures—38 months: First 26 months	to Apr. 1, '49	No. outer coils in service	Index 38 months
T-1				
Outer	8	31	1,600	1.9
Inner	1	3	.....	---
T-2				
Outer	33	111	1,600	3.57
Inner	1	2	.....	---
T-3				
Outer	61	181	2,000	4.66
Inner	7	8	.....	---
T-4				
Outer	3	26	160	8.375
Inner	0	5	.....	---

Design of Journal-Bearing Wedge.—A joint subcommittee representing the Committee on Car Construction and the Committee on Lubrication of Cars and Locomotives agrees that the existing tolerances for journal-bearing wedges are as close as can be expected on "as cast" or "as forged" surfaces. It recommends, however, that changes to clarify the wedge and gage drawings be submitted to letter ballot. These changes are an increase of 1/32 in. in dimension D (the width allowance for the top of the brass) for the 4¼-in. by 8-in. size, to provide clearance between a maximum bearing and a minimum wedge; a reduction of 1/16 in. in the depth of the sides of the wedge below the brass bearing face, to preclude the possibility of the bottom of the wedge coming in contact with the top of the side lugs on the brass when applying second-hand bearings; clarification of tolerances in the length of wedges of all bearing sizes; and designation of the faces of the wedge which must be smooth, true, and square. Changes to conform are also proposed in the journal-wedge gages and in the journal-bearing wedge condemning gages.

Journal-Box Lid Face and Lugs.—Manual page D-15A, adopted in 1948 as recommended practice, covers journal-box hinge lug and pin-hole bushings for integral journal boxes. The committee now proposes, for letter-ballot acion, that this page be revised to include separable journal boxes as well, to eliminate sizes A and B, and to add size G for separable journal boxes.

Proposed No. 18 Brake Beam.—Brake-beam failures due to tension rods breaking in the threads at the base of the units cause serious delays and expensive derailments. The subcommittee is of the unanimous opinion that a new brake beam free from the inherent weaknesses of the present A.A.R. Nos. 15 and 3 beams should be developed. The mechanical committee of the brake-beam manufacturers has designed seven new types of brake beams. Two are the Unit type and five require standard brake-beam hangers.

Arrangements have been made for road and laboratory tests of the seven new designs in comparison with the A.A.R. No. 3 beam, which is stronger than the No. 15. Road tests are under way on a total of 336 brake beams. Later, an eighth design, a one-piece cast-steel brake beam of the Unit type, was included in the road-service tests. Laboratory tests were made at the American Steel Foundries' laboratory at Granite City, Ill., of 11 brake-beam designs, including the A.A.R. standard No. 3 and a No. 3 with Whitworth threads, and four Unit type beams.

Based on the data from road and laboratory tests so far secured, the subcommittee proposes the following:

(1) That standard A.A.R. No. 15 and A.A.R. No. 3 brake beams be superseded by a new beam known as No. 18, and that beams of not less capacity be mandatory for new and rebuilt cars and for new beams applied to existing cars.

(2) That the standard brake-beam specifications be revised and Appendices A and B be added to them: Appendix A to cover instructions for securing approval and certification of brake beams, which would constitute A.A.R. standard brake beams and would not be shown in the Manual; Appendix B to show the form of the certificate of approval.

These two propositions, together with the revised gage drawings for the Manual to conform, are offered for adoption by letter ballot.

Five beams already tested meet the revised brake-beam specifications and would be granted certificates of approval and constitute new A.A.R. standard brake beams. Two of these are hanger type beams and three Unit type beams.

Brake-Beam Repair Specifications.—Proposed changes in the Specifications for Repairs to Freight Equipment Brake Beams for submission to letter ballot would:

(1) Eliminate the requirement that compression members must be straightened cold. Experience has demonstrated that no difficulty is experienced with those which have been hot straightened.

(2) Require tension-rod nuts to be new U.S.S. standard or A.S.A. Class 2 heavy hexagon type, to provide more bearing surface between the face of the nut and the surface of the brake head.

(3) Make riveting of the ends of the tension rod mandatory. In a number of instances lock nuts have worked off the rod.

(4) Change specifications to conform to elimination gages for camber of brake beam from page B-12 F. The gage shown on page B-8 provides the desired camber.

(5) Revise the method of lengthening brake-beam compression members shown on Manual page E-117 because the present arrangement interferes with the application of sleeve-type heads.

(6) Revise and transfer Manual pages showing the No. 15 brake beam and its parts to the Specifications for Repairs to Freight Equipment Brake Beams on new Manual pages.

(7) Eliminate tolerances from the dimensions of the "Go" and "No-go" parts of the strut pin-hole gage shown on Manual page B-12-A, because, with the tolerance shown, the go-gage would not enter a 1⅛-in. hole. The "No-go" gage is modified to harmonize.

Brake Pins. Pins of 1-7/32 in. diameter are considered necessary where the bottom rod extends through the bolster, in order to keep the shear stress below 10,000 lb. per sq. in. based on 80-lb. cylinder pressure. It is proposed for letter ballot that this diameter be added to the present 1-3/32-in. on Manual page E11.

Coupler-Striking-Casting Spacing.—The question as to whether there should be a minimum spacing between the top of the coupler shank and the bottom of the striking casting, to accompany the maximum vertical spacing of ⅞ in. adopted in 1948, was considered by a joint subcommittee on which were representatives of the Committees on Couplers and Draft Gears and Arbitration. It is proposed for letter-ballot action that the minimum of ¼ in. be added to Item 19, Manual page C-4.

Marking Freight Cars with Roller Bearings.—In order to protect freight cars equipped with roller bearings in humpyard switching service, it is proposed for letter-ballot action that Section L of the Manual be amended to provide for the use of the suffix letter "R" after the car number on both sides and ends of the car, of the same size as the numerals.

Revision of Lightweight Striking Casting.—Because patterns were not available during the war, the reduced-weight design of striker adopted in 1941 was not placed in service until 1946. In 1948 a few failures were reported in the integral carrier portion of the casting. Manufacturers' opinion is that the carrier part of the casting should be reinforced. It is proposed to return that part of the casting to the 1932 design, for letter-ballot action.

Welding.—It is proposed for letter ballot that Section B—Welding Limitations, of Section L of the Manual include provision for reclamation by fusion welding and machining to dimensions of journal-bearing wedges.

Metal Running Boards.—Because of objections registered by a number of railroads at the expense involved if cracks and fractures in metal running boards cannot be repaired by welding, the General Committee held in abeyance the prohibition against welding adopted by letter ballot last year and the question is being restudied.

Cast-Steel Bolsters.—The committee does not agree with the suggestion that the restriction on building up worn surfaces of bolsters by welding which requires that the material remaining must be equal to 60 per cent of the original section, be removed, because it believes that cases beyond the present limit usually involve old castings which have completed ordinary life service.

Coupler Draft Keys.—The recommendation that the wearing edge of draft keys be flame-hardened to increase service life is disapproved because the internal

stresses introduced are likely to cause hazardous failures in service.

Other Items.—Two items involve editorial clarification without change in intent. The welding of high-tensile-steel truck side frames, bolsters, couplers and parts, coupler yokes, etc., is under joint consideration of the committees involved.

Designating Letters for Cars.—The Symbol "MBD" is assigned to combination mail, baggage, and dormitory cars.

A number of changes in definitions of symbols for various types of house cars to clarify confusion were proposed. A new symbol, "LOC," for covered hopper cars to be used in carrying carbon black is recommended, the nature of this material being such that it is not practicable to clean the car for carrying other commodities. The term "weed burner" has been broadened to "weed exterminator" to include chemical-spray methods of destruction as well as burning as shown in General Service Maintenance-of-Way Equipment Cars.

These proposals are submitted for letter-ballot action.

Damage by Shake-Out Devices.—The probability of damage to car-body structure of steel hopper cars of all-welded construction is relatively high from the use of the Robbins shake-out device as at present built and operated. The damage to cars of all-riveted construction appears to be of considerably less magnitude. The subcommittee proposes to investigate possible changes of design and methods of operation of the Robbins device and to investigate the operation of two other devices.

The committee members are L. H. Kueck (chairman), assistant chief mechanical officer, Missouri Pacific; J. A. Gower (vice-chairman), assistant mechanical engineer, Pennsylvania; R. B. Winship, mechanical engineer, Canadian Pacific; J. McMullen, consulting engineer, Erie; R. D. Bryan, mechanical assistant, Atchison, Topeka & Santa Fe; R. H. Graff, assistant engineer, car equipment, New York Central; W. A. Pownall, assistant to general superintendent motive power, Wabash; F. J. Herter, engineer car construction, Chesapeake & Ohio; J. K. Peters, mechanical engineer, Denver & Rio Grande Western; H. L. Holland, assistant mechanical engineer, Baltimore & Ohio; L. R. Schuster, engineer car construction, Southern Pacific; M. C. Haber, general mechanical engineer, Union Pacific; F. G. Moody, superintendent car department, Northern Pacific; and K. H. Carpenter, superintendent car department, Delaware, Lackawanna & Western.

Discussion

J. L. Ryan, mechanical engineer, St. Louis-San Francisco, thought the truck builders should be commended for the improvements in riding qualities. A table in Exhibit A of the report shows that modern trucks with long-travel springs and built-in snubbing devices had vertical lading damage indexes only 2½ to 3 per cent of those for trucks of 20 years ago with a load of 169,000 lb. and a maximum speed of 65 m.p.h. New trucks loaded to 145,000 lb. and operated at 90 m.p.h. had vertical lading damage indexes only 10 to 20 per cent of the older trucks fully loaded at 65 m.p.h. The damage to cars from shakeout devices is often extreme and the use of such shakers will probably increase with today's high labor costs. The shakers, to accomplish their purpose, must necessarily subject the car to forces not taken into consideration when many of the present hopper cars were built. New designs will take these forces into consideration and give a balanced structure. The 1934 design should be tested under 1949 conditions, and the correction of weaknesses found would pay the roads dividends in lower maintenance. On the welded cars that did not stand up as well as riveted cars under the action of the shake-out device, it would be interesting to know when the cars were built, the sheet thickness, whether of carbon or alloy steel, and whether they represented the latest development in welded construction.

E. P. Moses, engineer of rolling stock, New York Central, said that his road had several failures with the I-beam bolsters recommended in the report, and thought the matter should be investigated further. The chairman of the committee replied that this was the first such case that had come to the committee's attention.

R. B. Cottrell, chief mechanical engineer, American Steel Foundries, recommended that roads which have to renew old designs of side frames give consideration to replacing the entire truck with a suitable later design on some of the cars and using parts from such replaced trucks for repairs to other cars in the series.

C. H. Green, engineer of car design, Illinois Central, found two parts of the report somewhat confusing and recommended clarifications. The I. C. has had trouble with hopper bodies shifting on center sills, and is now applying ¾-in. rivets instead of the ⅝-in. rivets shown in the Manual, with satisfaction to date. The I. C. agrees with the proposal that interchange cars be required to be equipped with a snubbing device, although trouble has been experienced with springs going solid where a snubber unit was applied in an A.A.R. 1936 or 1915 spring set-up; some even had to be removed and replaced with a standard coil spring.

The I. C. found that increasing freight-car decks and floors from 1¾ in. to 2½ in. thickness increased the strength more than applying an additional stringer to reduce the breaking through of floors from lift trucks. This method also costs less than an additional stringer, and benefits the entire floor. The subject deserves further investigation, as loads of 20,000 lb. and more are concentrated on a single floor board, and this suggests some application of a decking with steel incorporated in the design.

(The report was accepted and recommendations referred to letter ballot)

Safety Appliances

R. G. Henley
Chairman

This committee has continued to handle subjects pertaining to safety appliances assigned it by the General Committee, as well as questions referred by other committees and member roads. It also has continued to review safety appliance arrangements and details proposed for installation on tank cars. This work is rapidly becoming voluminous. Means are being devised which, with the cooperation of the tank car manufacturers, should minimize this work.

The proposed specifications and requirements for power brakes of the load-compensating type for freight service, as well as the replies received from the voting members to circular letter dated January 31, 1949, have been reviewed in detail.

After a thorough discussion of the proposed specifications and a careful review of the performance of the ABLC brake applications now in service, this project was referred to the air-brake manufacturers for further development before progressing this type of brake or submission of the proposed specifications and rules to the members for consideration and adoption.

The report was signed by Chairman

R. G. Henley, general superintendent, motive power, Norfolk & Western; H. T. Cover, chief motive power, Pennsylvania; G. W. Bohannon, chief mechanical officer, Chicago & North Western; F. K. Mitchell, manager of equipment, New York Central; J. M. Nicholson, director, department of research, Atchison, Topeka & Santa Fe; and A. K. Galloway, general superintendent motive power and equipment, Baltimore & Ohio.

(The report was accepted)

Joint Report—Railway Sanitation

The various studies, investigations and tests conducted by the Sanitation Research Project have been continued and the information developed compiled for inclusion in a final report in which it is proposed to include complete descriptions with supporting data, covering the various methods developed and tested for preventing or controlling the discharge of toilet hopper wastes onto the right of way. This will permit the selection of an arrangement which will meet individual mechanical, operating and service conditions.

The report will also include such drawings or sketches as may be necessary to illustrate typical suggested installations or adaptations to passenger cars. Estimated costs will be shown where practicable.

It is not possible to say definitely when these studies will be completed but every effort is being made to complete the final report, with recommendations, during the early part of 1950.

The report was presented by Chairman E. P. Moses, engineer car equipment, New York Central System, the Joint Committee on Railway Sanitation comprising three representatives each of the A.A.R. Mechanical Division, Engineering Division, Medical and Surgical Section, and the U. S. Public Health Service and one representative of the Canadian Department of National Health and Welfare.

(The report was accepted)

Committee on Tank Cars

During the past year this committee was called upon to give consideration to a total of 465 dockets and applications for approval of designs. There were 269 covering designs, materials and construction of 9,909 new shipping containers, for mounting on new cars or for replacement on existing cars.

Three applications covered the construction of 35 multiple-unit cars to be used for the transportation of Class I.C.C.-106A500 type one-ton containers each. There were 168 applications covering alterations in, additions to, or conversions and reconditioning of 2,510 existing tank cars or shipping containers. Twenty-five applications requested approval of tank-car appurtenance designs or materials, without reference to specific cars.

R. D. Bryan
Chairman

I.C.C. Specifications Amended

To clarify the intent, the Interstate Commerce Commission, by order dated July 22, 1948, amended Paragraph 13 (a) of its tank-car tank specification 106A500 to read, as follows: "13. Retests, alterations, and upkeep of tanks, safety valves, and vents.—(a) Each tank must be subjected, at least once every five years, to the tests as prescribed in paragraphs I.C.C. 11 (a), (b), (c), and (d). A tank must be condemned when it leaks or when the permanent expansion exceeds 10 per cent of the total expansion. Report giving data showing the results of these tests must be rendered by party making tests to the owner of tank and to the Bureau of Explosives, and each tank passing the test must be marked with the date (month and year) plainly and permanently stamped into the metal of one head or chime. For example, 1-38 for January, 1938. Dates of previous tests must not be obliterated."

To provide authority for the exclusion of safety valves or vents on ton containers used for the transportation of materials that should not be shipped in containers equipped with devices of this kind, the I.C.C., by order dated March 7, 1949, amended its tank car tank specification 106A500 at Par. 9 by addition of Subparagraph (d) reading as follows: "(d) Tanks must not be equipped with safety valves or vents if prohibited for the service in which tanks are used."

The report was signed by Chairman R. D. Bryan, mechanical assistant, Atchison, Topeka & Santa Fe.; Vice-Chairman L. R. Schuster, engineer car construction, Southern Pacific; H. S. Marsh, superintendent car department, Missouri Pacific; E. R. Hauer, chief mechanical engineer, Chesapeake & Ohio; A. A. Ott, chief car inspector, Pennsylvania; A. F. Leppla, mechanical engineer, Chicago, Rock Island & Pacific; J. J. Root, Jr., vice-president, Union Tank Car Company; R. T. Baldwin, secretary, the Chlorine Institute; H. J. Gronemeyer, manager, car maintenance division, E. I. du Pont de Nemours & Co.; R. W. Thomas, manager, research and development, Phillips Petroleum Company; and T. G. Rabbitt, superintendent tank cars, Sun Oil Company.

(The report was accepted)

(The meeting adjourned)

In Wichita for the Trans-Missouri-Kansas Shippers Board meeting this week, Ralph E. Clark, of the Association of American Railroads, announces that 13,000 grain cars are at country stations ready for the new wheat. This is 1,000 more cars than last year. Private enterprise is holding up its end, as the government planners are not. The government had its chance to move loan wheat out of the harvest belt before the new grain was reaped. It failed to do so. Now this region faces a situation in which there are lots of grain cars but scarcely any storage. To ease an already muddled situation the government will loan money on ground dumped grain and try to stimulate belatedly the construction of bins on the farm. This may be an omen of what is to come if America shifts more and more to government control. A few more instances of the efficiency of private enterprise and the inefficiency of government control may serve to stem the tide.

—Wichita (Kans.) Eagle, June 14

P. & S. Division Members See Tough Year Ahead

Kirk elected chairman for one-year term; Admiral Miller says supply and demand must govern petroleum industry policies

Right—J. C. Kirk, general purchasing agent, Chicago, Rock Island & Pacific, newly elected chairman of the division. Below left—Lewis Pilcher, executive vice-chairman, Freight Claim Division, A.A.R., addressed the meeting on the part P. & S. departments could play in loss and damage prevention. Below right — Admiral H. B. Miller of the American Petroleum Institute

Despite the return to a buyer's market all is not serene on the supply front, it was brought out at the 23rd annual meeting of the Purchases and Stores Division of the Association of American Railroads, held at the Palmer House in Chicago, June 27-29. The largest attendance in the history of the organization (513) heard much to make them realize that the troubles of the supply departments of the railroads are far from over. The danger from too large inventories, the 40-hour week, the increasing complexity of stores and purchasing operations due to the rapid change-over to the use of Diesel power, all will tend to make the year ahead difficult for supply personnel.

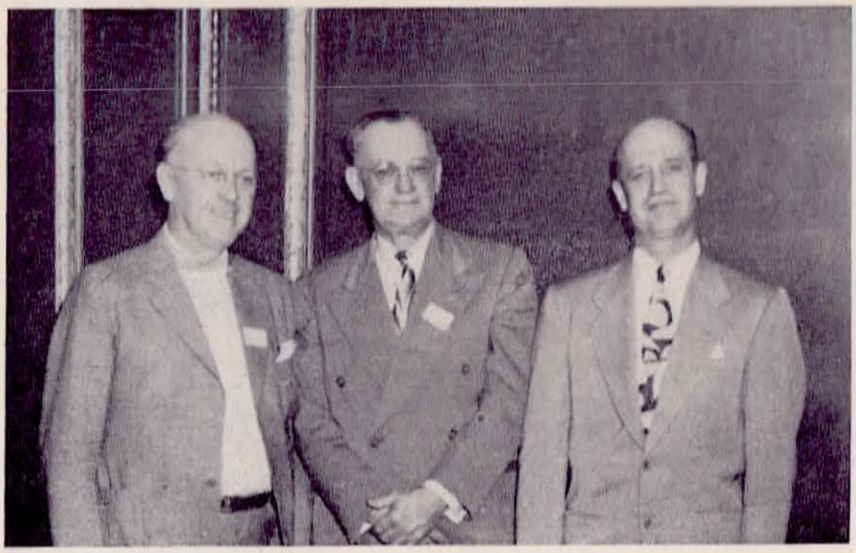
From the moment when H. E. Warren, chairman of the division and vice-president, purchases and stores, of the Gulf, Mobile & Ohio, brought these factors to the attention of the members until the closing moment when J. C. Kirk, general purchasing agent of the Chicago, Rock Island & Pacific, took over as the new chairman of the division, the tone of the meeting was one of "cut costs."

Mr. Warren and J. E. Goodwin, vice-president and executive assistant to president of the Chicago & North Western, warned against the danger of getting a stock of supplies on hand which would be embarrassing to the railroads at a later date, for, as Mr. Goodwin said, money tied up in stocks might better "be used to advantage on expenditures which are productive of economies. There are many places on a railroad where wise investment produces sizeable annual savings, but there is no profit in an unnecessarily large inventory of materials and supplies," particularly when prices seem to be on the down grade. One way to prevent excessive stores stock, Mr. Warren said, is through better stock keeping, creating a record which would be truly revealing as to consumption and days of supply on hand. These figures, Mr. Warren continued, would aid the purchasing department mightily, enabling them to purchase wisely.

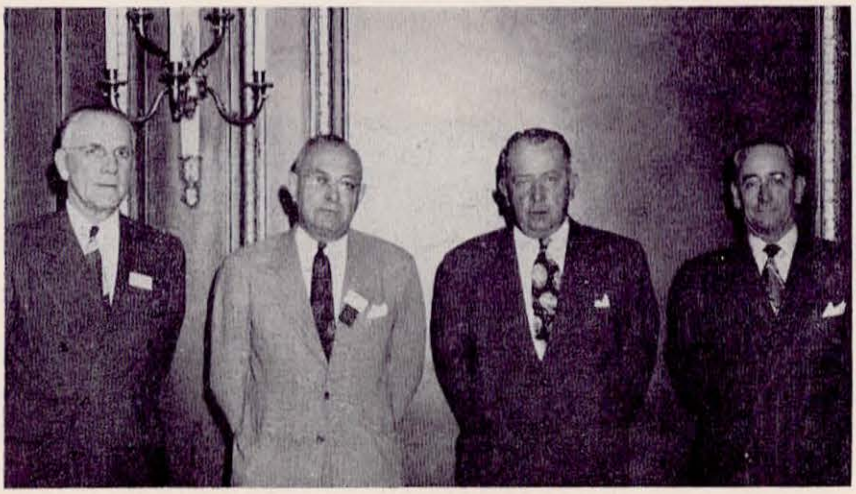
Loss and Damage

Materials handling came in for particular attention from Mr. Goodwin and J. H. Aydelott, vice-president, Operations and Maintenance Department, A.A.R., both for its direct cost-cutting possibilities and for its help in reducing the loss and damage bill. Mr. Goodwin said that although much progress had been made in these lines in the last few years "there is still much to be done." "We know that . . . investment in modern materials handling facilities will result in some worth while economies," he continued, "and it is regrettable that conditions do not permit expenditures for faster modernization of materials storage and handling facilities, but we must do something along these lines as finances permit in order to streamline the operation and get the advantages of the inherent economies." Mr. Aydelott said that the stores departments perform many of the functions of commercial shippers, and therefore that department should make sure that "in the matter of packaging, marking and handling they set a pattern which commercial shippers would do well to copy in the interest of loss and damage prevention."

Lewis Pilcher, executive vice-chairman, Freight Claim Division, A.A.R., told the convention that the P. & S. group too could do much to help prevent loss and damage. Specifically, new rolling stock purchases should have modern draft gears, good doors and improved trucks with snubber devices. Also, Mr. Pilcher went on, many benefits would result if storekeepers would load company material to the most distant possible break-bulk point, and if they would take more



East meets West. Left to right: F. M. Reardon, division storekeeper, Delaware & Hudson; E. H. Polk, purchasing agent, Southern Pacific; and E. S. Kniskern, division storekeeper, Delaware & Hudson



Another group of conventioneers: Left to right, H. R. Carroll, traveling storekeeper, Chicago & North Western; N. V. Oldenbuttel, general storekeeper, Atlantic Coast Line; R. E. Godley, assistant manager of stores, Illinois Central; and D. C. Canavan, foreman, reclamation plant, Boston & Maine

In this one, left to right: C. J. Kubler, general storekeeper, Kansas City Southern; A. W. Larsen, Texas Company; E. H. Hughes, purchasing agent, Kansas City Southern; J. S. Eaton, assistant to general purchasing agent, Western Maryland; and S. C. King, general storekeeper, Florida East Coast

care in marking drums and cylinders to be returned to source or general store, while the same thing applied, he said, to steel and steel products.

How Get More Diesel Fuel?

Admiral H. B. Miller, director, department of information, American Petroleum Institute, spoke of prices and supply and demand for Diesel fuel. There is, he said, just so much crude oil in a barrel, which is broken down into four components when refined. From one of these—medium distillates—Diesel fuel oil is made. To get more Diesel fuel from a barrel of crude oil—with present specifications for Diesel fuel—it would be necessary to further crack some of the other components, thus cutting down the supply of gasoline or some other product taken from the crude. One Diesel engine builder, Admiral Miller continued, had called on the "oil industry" to "subsidize" the Diesel by "providing a steady flow of premium quality Diesel fuel at prices unusually attractive to the roads." However, the speaker said, the law of supply and demand must determine what amount of Diesel fuel the oil companies would produce, for appealing to them to do anything which the supply situation did not demand was as unrealistic, he said, as asking the "railroad industry to carry more bulls and fewer cows." In addition, he continued, the "oil industry" could be accused of "squeezing whole industries out of existence" if it played favorites as suggested. This would give the economic planners and collectivists an excuse "to extend further their interest in private business affairs."

Experiments are being made, Admiral Miller went on, which indicate that it may be possible to use a Diesel fuel with a cetane rating as low as 40. Likewise, a reduction in flash point to 130 deg. F. may be in the offing, while the sulphur content may jump from 0.5 per cent to 1.0 per cent. This would increase greatly the yield of Diesel fuel from each barrel of distillate. If specifications should ever reach 35 cetane, 120 deg. F. flash point, and sulphur content 1.0 per cent, which seems possible, the yield of Diesel fuel per barrel of crude would be 220 per cent greater than it is under present specifications, he said. In the meantime, he concluded, we must conserve the supply of Diesel fuel by making sure it does Diesel jobs. We must examine the heating and air-conditioning of trains, for example, to see if some substitute for Diesel oil can be used in these operations.

Unified Sleeping-Car Service

C. R. Harding, president of the Pullman Company, pinch-hitting for I. B. Tigrett, president of the Gulf, Mobile & Ohio, who was unable to be present, gave a history of the Pullman operating organization since it was taken over by the railroads. The present management system, he said, had many advantages over separate operations by individual roads. Among those advantages, he said, which are recognized by both the railroads and the traveling public, are:

(1) Unified operation facilitates the mobilization of sleeping cars for all seasonal or other peak movements;

(2) The Pullman Company executive and operating organization is specially adapted to nation-wide functioning. This includes a widespread system of laundries, supply storage points, car shops, etc.;

(3) "Under unified service the formation and servicing of through-sleeping-car lines, permitting sleeping-car passenger to travel over the rails of two or more railroads without changing cars, is simplified and expedited";

(4) Unified operation offers wider opportunities for research and experimentation with new and improved equipment; and

(5) Publication of joint tariffs is simplified.

As noted, J. C. Kirk, general purchasing agent of the Rock Island, was elected chairman of the division for the coming year. The new vice-chairman is C. B. Neubauer, assistant to vice-president, Southern. New members of the General Committee are: S. C. King, general storekeeper, Florida East Coast, and A. N. Laret, general purchasing agent, St. Louis-San Francisco. Others reelected for three-year terms on the committee, are: J. S. Fair, Jr., purchasing agent, Pennsylvania; W. W. Kelly, general purchasing agent, Atchison, Topeka & Santa Fe; B. T. Adams, general storekeeper, Illinois Central; N. V. Oldenbuttel, general storekeeper, Atlantic Coast Line; and G. E. Wilson, manager of stores, Reading.

SO RAILROADING IS DECADENT?

"In perspective, the record of improvements in operation attained by Class I American railroads represents a solid cornerstone of our industrial progress. A brief resort to statistics shows striking information:

"The average net load per freight train is a well recognized index. Progress is indicated when it is realized that this increased from 437 tons in 1911 to 784 in 1930, to 849 in 1940 and to 1,176 tons in 1948. Last year's figure is the highest on record and was 46 per cent better than 1929, when it reached a peak of 804 tons.

"Another well known index widely used by carrier analysts is net ton-miles per freight train-hour. Our improvement on Class I railroads as so measured has shown an increase from 7,303 in 1920 to 14,028 in 1940, and to 18,658 in 1948. The 1948 record is also the highest on record and is 76 per cent better than 20 years before.

"It is of pertinent interest to note what has happened not only to freight car capacity but in the efficient use of freight cars as measured by average load per car and average miles per car per day. While the average capacity of 42.4 tons in 1920 increased to a new record of 52.0 tons in 1948, the average net ton-miles per serviceable freight-car-day for the same years increased from 536 to 1,020, and the average miles per serviceable freight car per day increased from 27.0 to 47.2.

"Progress as measured by the amount of equipment has permitted the transportation load of this country to be handled with a tremendous decline in ownership of freight cars and locomotives. In 1925 a traffic load of 413,814 million net ton-miles was handled with just over 2,357,000 freight cars and an ownership of just under 64,000 locomotives. In 1948 a traffic load of 638,600 million net ton-miles was handled with 1,838,689 freight cars (at the end of the year) and 38,981 locomotives. In other words, comparing these two years, 54 per cent more net ton-miles were handled with 22 per cent fewer freight cars and 39 per cent fewer locomotives."

—From testimony of P. M. Shoemaker, vice-president of the Delaware, Lackawanna & Western, in Ex Parte 168 hearings.

COMMITTEE REPORTS

Of the Purchases and Stores Division

Report of the General Committee

During the past year this committee authorized the various subject committees to appoint subcommittees, to be composed of the younger members of the division, to assist the subject committee in the handling and study of some specific assignment. It was felt that this would arouse interest in the work of the division among the younger men, and aid the main committee in its work, since the subgroups would be appointed on a regional basis and would bring to the work of the parent group the practical experience and points of view of various sections of the country.

The general committee suggested that some roads were not applying the recommendations of the various committees to their work. If any roads found these recommendations not sound, that finding should be brought up at the annual meetings and some procedure worked out for handling "such reports and recommendations as are controversial."

The general committee and the office of the executive vice-chairman have been cooperating with the Office of Defense Transportation under the "voluntary" plan for allocation of steel—Public Law 395. With the expected dissolution of O.D.T. on June 30, 1949, the report explained, the division will work with the Department of Commerce, which will administer the plan until its expiration date on September 30, 1949. In view of the present supply situation it seems likely that after that date there will be no further concern with the voluntary plan.

This report went on to praise the special purchasing committee for its good work in alleviating the shortage of boiler and superheater tubes. This was done by working with the American Iron & Steel Institute, the Office of Industry Cooperation of the Department of Commerce, and the suppliers of these products.

It was announced that the Standard Reclamation Manual recommended by the reclamation committee in its 1947 report had been issued in loose-leaf form.

The following members were elected to life membership in the division:

J. H. Lauderdale, former general purchasing agent, Missouri Pacific;

W. B. Hall, former general purchasing agent, Denver & Rio Grande Western;

I. H. Lance, former general storekeeper, Delaware, Lackawanna & Western;

S. R. Proffit, former purchasing agent, Western Pacific.

Following are members of the committee: H. E. Warren (chairman), vice-president, purchases & stores, Gulf, Mobile & Ohio; J. C. Kirk (vice-chairman), general purchasing agent, Chicago, Rock Island & Pacific; B. T. Adams, general storekeeper, Illinois Central; V. N. Dawson, general storekeeper, Baltimore & Ohio; G. A. Goerner, general storekeeper, Chicago, Burlington & Quincy; E. J. Leonard, general storekeeper, Chicago & North Western; C. B. Neubauer, assistant to vice-president, Southern; N. V. Oldenbuttel, general storekeeper, Atlantic Coast Line; J. L. Quarles, superintendent stores, Chesapeake & Ohio; C. L. Wakeman, general storekeeper, Wabash; G. E. Wilson, manager stores, Reading; G. M. Betterton, general purchasing agent, Southern Pacific; Clyde Cocke, purchasing agent, Norfolk & Western; J. S. Fair, Jr., purchasing agent, Pennsylvania; W. W. Kelly, general purchasing agent, Atchison, Topeka & Santa Fe; A. L. Prentice, manager purchases & stores, New York Central; H. M. Rainie, purchasing agent, Boston & Maine; B. W. Roberts, vice-president, purchases & stores, Canadian Pacific; M. E. Towner, retired purchasing agent, Western Maryland; G. T. Wickstrom, general purchasing agent, Union Pacific; W. J. Farrell, executive vice-chairman, P. & S. Division, A.A.R.

The report of the committee was accepted as read.

Department Manual — Recommended Rules and Practices

This committee announced that it had made all changes in the manual recommended at the 1948 annual meeting. These changes were distributed in October, 1948. It further reported that because of the many changes to the manual which had been recommended in the last few years, the committee had found it necessary to revise the index completely. This committee's report was closed by recommendations that all committees strive for brevity and clarity in any recommended changes, and that purchasing and stores department officers make the manual a subject of study for their employees, especially the younger ones.

Following are members of the committee: C. D. Longsdorf (chairman), general storekeeper, New York Central; E. B. Isenogle (vice-chairman), chief clerk to general storekeeper, Baltimore & Ohio; E. S. Birt, division storekeeper, Atchison, Topeka & Santa Fe; T. S. Edgell, district storekeeper, Gulf, Mobile & Ohio; H. V. Gamper, assistant general purchasing agent, Illinois Central; J. W. Hagerty, assistant purchasing agent, Pennsylvania; A. N. Laret, general purchasing agent, St. Louis-San Francisco; R. A. Schuff,

C. D. Longsdorf
Chairman

traveling storekeeper, Chicago, Burlington & Quincy; A. W. Westerhaus, assistant purchasing agent, Texas & New Orleans; G. E. Wilson (chairman ex-officio), manager stores, Reading.

The report was accepted.

Standard Material Classification

This report revealed that 96 per cent of the Class I line-haul railroads which operate 83 per cent of the total track-miles are using the standard material classification, and suggested that those not doing so give further consideration to its adoption.

There followed a list of electrical material peculiar to Diesel-electric locomotives which the committee suggested should be added to Class 25A in the index and detail of the classification. These included such parts as armatures, contactors, field coils, generators, regulators, relays and switches. Also carried in this report were lists of Diesel parts to be added to Class 26, and miscellaneous items to be eliminated from or added to the various classes of material.

The committee recommended the following changes be made in the detailed classification, so that the headings would read as below:

Class

14 Non-ferrous metals such as aluminum, brass, copper tubing and shapes, ferrules, soft metals in bars or pigs

15 Bar iron and steel, tool steel, cold drawn seamless steel tubing, unfabricated rolling shapes, wire netting, chain, except light coil, boiler, firebox, tank and sheet iron steel

25A Electric material peculiar to electric and Diesel-electric locomotives

25C Electric material peculiar to passenger, freight train cars and traction line cars

26 Material peculiar to Diesel locomotives, gas-electric motor cars, automobiles, auto-trucks, power trucks, airplanes, etc., not specifically included in other classes

42 Pipe—iron and steel, and fittings of all kinds for steam, air and water; plumbing fixtures and parts for buildings

Following are members of this committee: F. J. McNulty (chairman), assistant to general storekeeper, Boston & Maine; F. E. Hartzler (vice-chairman), division storekeeper, Chicago, Rock Island & Pacific; J. W. Cockrill, district storekeeper, Illinois Central; H. Gibson, assistant general storekeeper, St. Louis-San Francisco; J. C. Hart, inspector of stores, Chicago, Milwaukee, St. Paul & Pacific; G. E. Hinton, assistant to general storekeeper, Southern Pacific; D. T. Matthews, district storekeeper, New York Central; J. K. McCann, district storekeeper, Chicago, Burlington & Quincy; J. F. Reynolds, classification inspector, Erie; W. O. Whitlow, material supervisor, Atchison, Topeka & Santa Fe; J. H. Whitman, head clerk, service bureau, Pennsylvania; and C. B. Neubauer (chairman ex-officio), assistant to vice-president, Southern.

Discussion

Most of the discussion of this report centered around the advisability of eliminating pages 5-72 of the Standard Material Classification, as recommended by the committee. The committee's recommendation was upheld.

Despite some opposition to the corrections to the Detailed Classification, the committee's recommendations were followed. Opposition was based mainly on the expense involved in continually changing the Classification, and whether certain items belonged in the groups to which the committee assigned them.

After discussion the report was accepted as read.

Scrap, Handling and Preparation, Classification and Sale

One part of this committee's report revealed that over the last five years, including preliminary figures for 1948, the railroads have originated about 13.4 per cent of all purchased steel scrap and in turn have bought 9.5 per cent of the total rolled steel production. The 1948 figures reveal that in that year the railroads bought 6,189,000 net tons of rolled steel.

The committee recognized the gradually decreasing demand for scrap and the falling prices. They recommended, therefore, that all possible economies be made in the handling of scrap, such as the use of overhead, gantry, or internal combustion locomotive cranes instead of steam cranes. Their report stated that cranes powered with internal combustion engines "afford 33 per cent additional working time compared to steam, due to the reduced time required for servicing; and operation is more economical and efficient." Also recommended was the use of mobile units for supplying oxygen at cutting operations, since switching charges on cars of empty and full cylinders would be eliminated, as would manual handling of cylinders, while oxygen would be provided at more even pressure.

Following are members of this committee: R. E. Godley (chairman), assistant manager stores, Illinois Central; D. C. Canavan (vice-chairman), general foreman, reclamation plant, Boston & Maine; L. S. Atkinson, assistant purchasing agent, Pennsylvania; A. J. Baker, division storekeeper, Atchison, Topeka & Santa Fe; J. C. Baker, division storekeeper, Southern; A. J. Boink, general foreman, Chicago & Eastern Illinois; F. F. Forbes, supervisor scrap & reclamation, Erie; J. R. Fullerton, traveling storekeeper, Missouri Pacific; W. J. Kenney, general foreman, Chicago & North Western; A. T. Kipping, supervisor scrap & reclamation, Chicago, Rock Island & Pacific; J. H. Lau, Jr., statistical clerk, Western Maryland; W. F. Lawson, superintendent reclamation plant, St. Louis-San Francisco; Thomas McArthur, general foreman, reclamation plant, Northern Pacific; W. G. Muschler, superintendent reclamation & scrap, Chicago, Burlington & Quincy; C. H. Rothgery, regional storekeeper, Baltimore & Ohio; J. N. Wandell, traveling storekeeper, Chicago, Milwaukee, St. Paul & Pacific; P. E. Welch, general storekeeper, Texas & New Orleans; C. S. Wetherholt, division storekeeper, Chesapeake & Ohio; G. M. Wright, manager scrap & reclamation, New York Central; A. L. Prentice (chairman ex-officio), manager purchases & stores, N.Y.C.

While discussion was brief, it was suggested that the roads defer any action in the committee's recommendation that the railroads try to classify melting steel as Classification 24A, therefore eliminating Classification 24. The assembly also voted that No. 1 scrap rail, Class 27, have as minimum length pieces 8 ft. long.

Except for these changes, the report was accepted as read.

General Reclamation

This group recommended that knuckle pins suitable for reclamation be heated to about 1,600 deg. F., straightened, reheated to approximately the same temperature, and then quenched in oil of a temperature of about 125 deg. F.

A recommended process for reclaiming silver from Diesel locomotive bushings was advanced. The bushing is connected to a low voltage (direct current) positive terminal and to a piece of stainless steel which is used as a negative electrode, in a cyanide-caustic soda solution. Silver plates off onto the stainless steel and is easily removed from it. Operation of this proces by laboratory personnel was recommended because the cyanide solution is poisonous.

The report cautioned against welding unit sold-truss type brake beams on which the forged truss had been broken. The truss should be scrapped and usable parts reclaimed. Also, wear plates on the extended ends of these beams should be renewed once wear of ¼ in. is noticeable. All wear plates and brake beam heads for the three types of unit solid-truss type brake beams in service may be used on either end of the brake beam for which they are intended, the committee stated.

John Voorhies
Chairman

Following are members of the committee: (1) Purchases & Stores Division Representatives: John Voorhies (chairman), superintendent scrap & reclamation, New York Central; W. F. Brown (vice-chairman), superintendent scrap & reclamation, Wabash; C. L. Foust, supervisor scrap & reclamation, Illinois Central; A. T. Hendricks, reclamation foreman, Missouri-Kansas-Texas; T. F. Kelly, district storekeeper, New York, New Haven & Hartford; A. M. McHenry, purchasing agent and storekeeper, Gulf, Colorado & Santa Fe; H. O. Nyquist, dismantling yard foreman, Northern Pacific; O. L. Temple, assistant general storekeeper, New York, Chicago & St. Louis; (2) Mechanical Division Representatives: W. C. Barrer, assistant superintendent, car shops, Chicago & North Western; H. P. Hass, director of tests & research, New York, New Haven & Hartford; R. B. Mack, foreman, reclamation plant, Pennsylvania; J. McMullen, consulting engineer, Erie; E. H. Poenisch, general foreman, Chicago, Milwaukee, St. Paul & Pacific; (3) Engineering Division Representatives: C. D. Cronk, assistant signal engineer, New York Central; J. O. Fraker, general electrical & shop engineer, Texas & Pacific; E. E. Martin, assistant engineer, Pennsylvania; G. E. Martin, superintendent water service, Illinois Central; R. A. Morrison, engineer maintenance of way, Pere Marquette district, Chesapeake & Ohio; and V. N. Dawson (chairman ex-officio), general storekeeper, Baltimore & Ohio.

Discussion

In the discussion following the reading of this report, a representative of the Denver & Rio Grande Western told of that road's process for reclaiming silver from Diesel locomotive bushings. That process was simply the application of heat, much as heat is applied to journal brasses to remove the babbit from them. By this process the D. & R.G.W. had secured 17½ lb. of silver from 49 brasses, for which the railroad got 60 cents per Troy ounce from a broker.

The report was accepted subject to letter ballot.

Forest Products

This committee recommended that for air dried lumber a moisture content of 20 per cent be considered acceptable, since it is impossible at some seasons of the year to air dry lumber to the moisture content asked for in the Mechanical Division specifications, which are for kiln dried lumber.

Once again the forest products group asked that all roads consider appointing a committee composed of mechanical, engineering and purchases & stores personnel, to work on problems involved in the purchase of forest products. One road reported that such a committee on its line had succeeded in eliminating many sizes of lumber from its stores stock and added others because of changes in rolling stock. An effort also was made to adhere closer to current grading rules of lumber associations. These revisions have made orders more attractive to mills and, as a rule, have been reflected in lower prices.

Committee 5 recommended that the Engineering Division of the A.A.R. consider taking all switch ties in breaks of one (1) ft. While it was recognized that there was much to be said for and against this practice, the committee's thought was that the advantages outweighed the disadvantages.

Concerned with the costs of materials handling, this committee suggested that the Mechanical Division consider some changes in its loading rules which restrict the use of flat cars for materials which are of less than 12 ft. in length. This rule precludes use of the fork truck in unloading operations, the report continued. Fork truck or other mechanical handling of unitized loads of products is being experimented with at present and gives promise of making possible many handling economies. But, the report recognized, heavy mechanical equipment is also doing much damage to box car floors, and perhaps the Mechanical Division should consider the use of heavier decking in the closed cars, specifically 2⅜ in.

C. S. Burt
Chairman

The forest products committee saw the procurement situation in the year ahead as a good one, with no real shortages, and expected even better prices.

The report went on to urge greater use of lumber treated with fire retardant and fire resistant chemicals, and for wider railroad participation in conservation activities.

The last recommendation of this group was that all cross and switch ties be placed on the positive list for export and that ties be identified as to type on all export quotas, regardless of dimensions, and that only the treated variety of ties be exported.

Following are the members of this committee: C. S. Burt (chairman), assistant to vice-president—purchases & stores, Illinois Central; M. B. Moore (vice-chairman) assistant general purchasing agent, Chicago & North Western; Group I (Eastern-Southern): W. M. Hinkey (chairman) lumber agent, Baltimore & Ohio; G. H. Bolton, tie & timber agent, Boston & Maine; R. W. Cook, chief tie & timber agent, Seaboard Air Line; W. F. Dunn, tie & timber agent, Southern; J. S. Eaton, assistant general purchasing agent, Western Maryland; T. P. Lynch, assistant general purchasing agent, New York Central; Daniel E. Muldoon, assistant manager purchases & stores, Delaware, Lackawanna & Western; E. W. Peterson, purchasing agent, Bangor & Aroostook; Group II (Mid-Western): P. E. Turner (chairman) lumber agent. Atchison, Topeka & Santa Fe; J. R. Cade, assistant purchasing agent, Texas & New Orleans; G. B. Campbell, tie & timber agent, Missouri Pacific; W. A. Hendricks, tie & timber agent, Missouri-Kansas-Texas; G. J. Hoffman, assistant purchasing agent, Pennsylvania; L. W. Kistler, superintendent treating plants. St. Louis-San Francisco; W. F. Myers. chief lumber inspector, Chicago, Burlington & Quincy; W. K. Smallridge, assistant storekeeper, Northern Pacific; E C. Thom, lumber buyer, Chicago, Rock Island & Pacific; Group III (Far Western): L. V. Guild (chairman) purchasing agent, Union Pacific; L. S. Myers. assistant purchasing agent, Northern Pacific; E. H. Polk, purchasing agent. Southern Pacific; E. R. Teepell, western representative purchasing department. Fruit Growers Express Company; and G. M. Betterton (chairman ex-officio) general purchasing agent, Southern Pacific.

Discussion

Up-to-date reports from the various regional committees indicated that the forest products supply situation was much improved since the first of the year. In the Eastern-Southern region, said W. M. Hinkey, lumber agent, Baltimore & Ohio, supply and production were ample, tie supply was adequate and prices have dropped a bit since the first of the year, while prices on better grades of lumber are down about 10 per cent from the January 1 figure. In the Mid-West, said P. E. Turner, lumber agent, Atchison, Topeka & Santa Fe, the supply of lumber is good and prices are down, while the quality is going up, and some roads are even getting hewn ties again. E. H. Polk, purchasing agent, Southern Pacific, reporting on conditions in the Far West, said that the supply of Douglas fir ties and lumber is adequate, while prices are on the down grade, with still lower prices a possibility.

The report was accepted, as printed, for information.

Fuel—Coal, Fuel Oils

E. S. Bonnet
Chairman

This committee was divided into two groups during the year, one to consider coal problems, the other to concentrate on fuel oil and Diesel fuel oil.

The latter of these subcommittees reported that during the past winter trouble had been experienced because of paraffin wax forming in the Diesel fuel and clogging the filters and fuel lines. "Since the supply of low-pour-point Diesel fuel oil is limited, attention should be given to insulation and protection of exposed fuel lines and pumps to prevent the formation of wax." This group also reported that there had been price reductions in Diesel fuel oil in practically all areas except the Pacific Coast. Further economies in Diesel fuel may be ahead, the report continued. One road is running tests, in conjunction with a locomotive manufacturer and an oil company, on a lower grade of Diesel fuel. "If these tests reveal that an oil meeting a degraded specification can be used satisfactorily, then this will result in widening the cut of oil from crude which will be available for Diesel fuel oil. This should result in further price economies."

The subcommittee which developed the report on coal was optimistic about the quality of coal. It expected that reduced demand will put many submarginal producers out of business, thus making it possible for the railroads to limit their coal purchases to the more suitable coals. This group also stated that more double-screened coals should be available soon, and further suggested that railroads give consideration to storage of coal for emergencies, for it could see no signs as yet of labor stability in the coal fields.

Statistics were presented to show consumption and prices of the various fuels by regions and for the United States as a whole.

Last year, the railroads of the United States purchased 1,206,408,725 gal. of Diesel fuel oil, at an average price 10.17 cents per gal. Consumption of this fuel increased 24 per cent in volume from June, 1948, to January 1, 1949, and in the first six months of this year the average monthly consumption increased 16 per cent over the last half of 1948. Purchases of bituminous coal in 1948 were down about 10 per cent from 1947, as was the number of gallons of residual fuel oil bought.

Following are members of this committee: E. S. Bonnet (chairman), fuel purchasing agent, New York Central; W. H. Weymouth (vice-chairman), fuel agent, Atchison, Topeka & Santa Fe; C. F. Bayer, manager, purchases & stores, Delaware, Lackawanna & Western; J. J. Bilek, lumber & fuel buyer, Chicago & North Western; J. R. Clary, general purchasing agent, New York, Chicago & St. Louis; F. L. Dobson, fuel purchasing agent, Pennsylvania; M. P. Foley, fuel purchasing agent, Canadian Pacific; E. R. Grinsted, buyer, Chicago, Burlington & Quincy; A. W. Hix, general purchasing agent, Chesapeake & Ohio; E. H. Hughes, purchasing agent, Kansas City Southern; W. T. Lambert, assistant general purchasing agent, Southern Pacific; C. N. Lammers, chief inspector & chemist, Chicago & Eastern Illinois; H. E. Martin, fuel agent, St. Louis-San Francisco; W. G. Mateer, manager purchases & stores, Elgin, Joliet & Eastern; J. E. May, fuel agent, Baltimore & Ohio; M. H. McGlynn, fuel agent, Chicago, Rock Island & Pacific; W. G. Rathert, assistant purchasing agent, Missouri Pacific; H. N. Ricks, fuel supervisor, Texas & Pacific; E. H. Titgen, fuel agent, Missouri-Kansas-Texas; S. J. Trudea, assistant to purchasing agent, Boston & Maine; E. L. Jensen, division storekeeper, Northern Pacific; A. E. Johnson, assistant to chief purchasing officer, Chicago, Milwaukee, St. Paul & Pacific; L. C. Walsh, assistant purchasing agent, Atlantic Coast Line; H. O. Wolfe, purchasing agent, Gulf, Mobile & Ohio; and W. W. Kelly (chairman ex-officio), general purchasing agent, Atchison, Topeka & Santa Fe.

This report was accepted as information.

Shop Manufacturing

In the year since the last annual meeting this committee devoted much attention to the comparative costs of materials manufactured in shops and those purchased from vendors. From its examination of costs on pressed steel shapes for construction and repair of hopper cars, the group decided that "pressed steel shapes can be economically manufactured in our shops." Where costs of purchased and shop-manufactured articles are the same, shop manufacturing was considered best because better stock control is possible.

Once again this committee recommended the organization of a permanent shop manufacturing committee on each road, composed of p. & s., accounting, mechanical and test departments' personnel, for they felt that "it is essential in an economical shop procurement procedure." Where the volume of work was great they also suggested that a manufacturing shop be established, preferring that to doing the work in the regular maintenance shop.

C. R. Wheeler
Chairman

In repair and manufacture of Diesel parts the group found that this activity has not "been developed to the extent that repairs are made to steam locomotive items." While it found a considerable number of major parts (for Diesels) being repaired in company shops, and in some instances that considerable time saving, better stock control and less stock investment result where shop manufacturing and repairing are being done, still it suggested that careful consideration be given this matter because of the exacting conditions to be met, and that the work be undertaken only after consultation with the mechanical and engineering deparments.

Following are members of the committee: C. R. Wheeler (chairman), division storekeeper, Baltimore & Ohio; G. P. Butcher (vice-chairman), assistant general storekeeper, Norfolk & Western; W. A. Charles, general storekeeper, Grand Trunk Western; J. S. Hayes, storekeeper, Boston & Maine; D. L. Helsel, chief clerk, general stores, Southern Pacific; F. E. Marvin, assistant district storekeeper, Northern Pacific; J. C. McLendon, division storekeeper, Atlantic Coast Line; D. H. Phebus, general storekeeper, Chicago, Milwaukee, St. Paul & Pacific; W. C. Replogle, chief clerk, office of works storekeeper, Pennsylvania; A. V. Sorenson, division storekeeper, Atchison, Topeka & Santa Fe; H. E. Tice, division storekeeper, Erie; R. F. Welch, assistant general storekeeper, Texas & Pacific; and E. J. Leonard (chairman ex-officio), general storekeeper, Chicago & North Western.

There was some comment as to whether or not store orders for special use should be written from and recorded in the stock record, as recommended in the committee's report. The final vote indicated that most members did not favor taking special use material into the stock record.

The amended report was accepted, subject to a letter ballot.

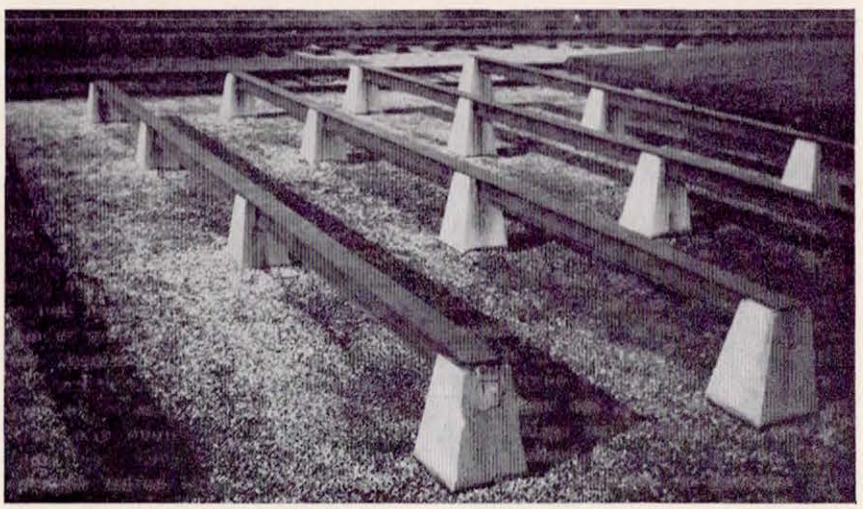
Maintenance of Way and Construction Materials

Last year's committee had recommended that the handling of electronic material, including repairs to such material, should be under the jurisdiction of the stores department. This year's group found that generally those recommendations were being followed.

The increase in the use of roadway machinery and automotive equipment was bringing its problems, the report continued. In order to keep this equipment active it was necessary to keep an adequate stock of repair material on hand, without at the same time getting such a stock of these parts that there would be an economic loss if the equipment became obsolete. In order to avoid down time to this equipment and to keep from tieing up too much money in parts stock, this committee recommended that repairs and spare parts stocks be centralized at one point, and these stocks be placed under the supervision of the stores department.

E. Bartos
Chairman

Many roads have discontinued sending out supply trains, the report went on, but there are circumstances which make



Standard pole-storage bearings of concrete and scrap rail

it advisable to consider the reestablishment of the practice. Some of these factors are: the cost of preparing shipments for handling through freight stations; the present high cost of handling l.c.l. freight; loss and damage sustained in handling through freighthouses; cost of handling scrap by use of peddler cars and work trains; and the decline in traffic which may now make the operation of supply trains more practicable.

The members of the committee are: E. Bartos (chairman), general traveling storekeeper, Atchison, Topeka & Santa Fe; J. C. Blackwell (vice-chairman), district storekeeper, Illinois Central; R. R. Anderson, assistant general storekeeper, Great Northern; H. H. Baber, supervisor maintenance-of-way material yard, Norfolk & Western; B. A. Cumbea, district storekeeper, Chesapeake & Ohio; J. M. Day, assistant to general storekeeper, Southern Pacific; A. C. Harris, maintenance-of-way storekeeper, Chicago, Milwaukee, St. Paul & Pacific; J. H. Howland, traveling storekeeper, Chicago & North Western; F. A. Jarres, division storekeeper, Baltimore & Ohio; R. H. Johnson, district storekeeper, Chicago, Burlington & Quincy; M. G. Jones, assistant to general storekeeper, Pennsylvania; T. E. McIntyre, storekeeper, New York Central; A. P. Pollard, traveling storekeeper, Boston & Maine; J. L. Quarles (chairman ex-officio), superintendent stores, Chesapeake & Ohio.

Discussion

C. B. Neubauer, Southern, suggested that, since it was so important in these days to keep maintenance-of-way work equipment going full blast, perhaps the roads should think twice before they ordered spare parts for this equipment on anything like a "blanket order" basis, since this might mean that equipment might be subject to "down time" occasionally.

The report was accepted subject to letter ballot.

Stationery and Printing

This committee again placed emphasis on the benefits to be obtained from standardization of forms. It recommended that yard switch lists be standardized to size 4 in. by 9 in. and on 100-lb. ground wood-tag stock, while the size recommended for daily report of cars on hand is 8½ in. by 11 in. or 4¼ in. by 11 in., printed on one side on 11¼ lb. low sulphite substance, with ¼ in. spacing between horizontal lines. For time and delay report of engine and train employees it repeated the recommendation of last year's committee, which said, in part: "These forms are used in large quantities and offer possibility for a standard form size 5½ in. by 11 in. on railroad manila or No. 1 white news."

It also recommended a more general use of smaller public timetables and cited the case of one member road whose use of the small timetable had led to "a saving . . . of 75 per cent of the paper stock and composition alone." Also suggested was wider use of low sulphite 11¼ lb. stock "for printed forms in place of bonds where ground wood papers are not acceptable. This practice will effect considerable economy and give satisfactory results."

Following are members of this committee: G. W. Kendall (chairman), stationery buyer, Atchison, Topeka & Santa Fe; H. Carter (vice-chairman), general stationery storekeeper, New York Central; C. C. Anderson, stationer, Northern Pacific; W. P. Beall, stationery storekeeper, Southern Pacific; P. R. Dawson, stationery storekeeper, Baltimore & Ohio;

G. W. Kendall
Chairman

Vincent Erb, stationer, Reading; O. D. Fisher, stationery storekeeper, Pennsylvania; W. W. Griswold, stationer, Chicago, Rock Island & Pacific; F. J. Mayer, stationery buyer, Illinois Central; P. R. Merriman, storekeeper, Maine Central; R. L. Newcome, stationer, Delaware, Lackawanna & Western; H. E. Peckover, stationery storekeeper, Chesapeake & Ohio; C. S. Williams, stationery storekeeper, Texas & New Orleans; C. C. Wooten, stationer, Nashville, Chattanooga & St. Louis; and H. M. Rainie (chairman ex-officio), purchasing agent, Boston & Maine.

The report was accepted.

Fire Prevention, Safety Practices

Fire prevention activities have saved the railroads much money, this report stated. However, the loss to the railroads from some 143 fires in 1947 was $54,770, indicating that there is much still to be done along prevention lines.

Insurance should properly protect all company property, the report continued. In order to do its part to insure proper protection, the purchases and stores department of each railroad should periodically furnish to the insurance department

E. J. Urtel
Chairman

the value of stores equipment and stock on hand, while frequent checks should be made so that the insurance department will be informed quickly of changes in quantities and values of material at different locations.

The committee members are as follows: E. J. Urtel (chairman), division storekeeper, Baltimore & Ohio; D. E. Cain (vice-chairman), chief clerk to general storekeeper, Atchison, Topeka & Santa Fe; C. A. G. Blomquist, assistant purchasing agent, Central of Georgia; P. W. Grayson, general storekeeper, Texas & Pacific; W. T. McCauliff, assistant general storekeeper, New York Central; J. E. Mills, traveling storekeeper, Maine Central; M. J. Stelzer, division storekeeper, Erie; V. M. Stratton, district storekeeper, Canadian National; G. Wonnell, storekeeper, Pennsylvania; and N. V. Oldenbuttel (chairman ex-officio), general storekeeper, Atlantic Coast Line.

Discussion

Mr. Neubauer of the Southern suggested that all employees engaged in hazardous work use safety shoes, but saw no way that all could be made to wear them. A spokesman for one road stated that wearing safety shoes was a condition of employment with them, or

if the employee desired he could buy metal caps to put over the toes of regular shoes. These caps gave the same protection as the safety shoe, it was said.

A representative of the Denver & Rio Grande Western recommended rubber clothing for personnel handling Diesel fuel, in order to avoid the chance of fire which might catch on their clothing.

The report was accepted as read.

Storage and Material Handling Facilities

Once again this committee devoted the bulk of its report to the efforts of the purchases and stores departments to cut their handling costs through mechanization. This report cited cases of savings in man-hours—ranging between 75 and 95 per cent—where the railroad was able to unload unit loads of materials as

E. G. Roberts
Chairman

against unloading the same amount of material which arrived loose in carloads. Cost figures also were shown for intra-yard movement of lumber for decking and lining of cars. These figures showed savings of from 35 to 95 per cent. The committee also disclosed observations made on a visit to a commercial lumber yard handling lumber in unit loads. This yard, according to the report, is handling more lumber than at any other time in its history, and now is doing this with lift and straddle trucks. The result has been that where they used to have 162 employees, they now have between 80 and 90, while at the same time the storage capacity of the yard has been increased by greater use of vertical space.

In efforts to get more supplies shipped to them in unit loads the railroad stores departments have been working with their suppliers. For many reasons they have met with only slight success. Some of the reasons given by suppliers for their failure to ship in unit loads, with or without pallets, were:

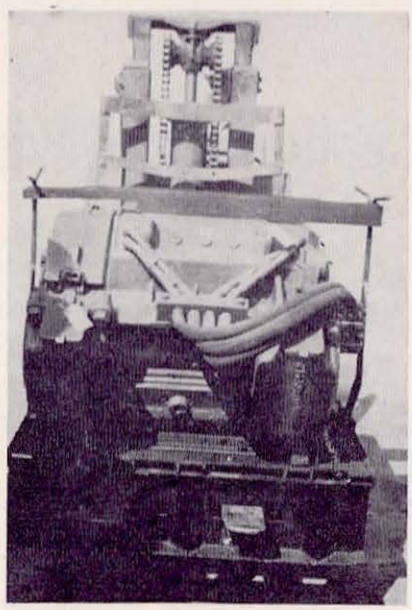
1. Freight car doors too narrow for mechanical handling;
2. No dunnage allowance for pallets, etc., used in making unit loads;
3. Cost of pallets too high;
4. Have no equipment for handling unit loads;
5. Loading facilities not set up for handling pallets.

The committee stated that "The practice of unit loading is probably the one greatest advance being made to release cars promptly." In recommending types of fixed facilities this group asked that new construction be done to facilitate mechanical handling. This was for time conservation, better space utilization and increased safety.

A list of twelve articles was given, all of which are being received on pallets by at least one road. In all cases the supplier furnishes the pallets. In five cases the railroad keeps the pallet once it comes into its possession. This is because the pallet is of the expendable type. In three cases the railroad pays the return freight on the pallet, while in two others the shipper pays the return charges.

The members of the committee follow:

E. G. Roberts (chairman), stores manager, Chicago, Rock Island & Pacific; J. C. McCaughan (vice-chairman), general storekeeper, Chesapeake & Ohio; J. V. Anderson, assistant general storekeeper, Chicago, Milwaukee, St. Paul & Pacific; F. B. Bartsch, assistant general storekeeper, Chicago & North Western; S. L. Bouque, assistant general storekeeper, Southern Pacific; E. J. Fowler, traveling storekeeper, Southern; D. E. Frank, works storekeeper, Pennsylvania; G. R. Merryman, general storekeeper, Central of New Jersey; J. J. McKinnon, storekeeper, Boston & Maine; B. H. O'Meara, district storekeeper, Missouri Pacific; J. W. Patterson, district storekeeper, New York Central; C. E. Reasoner, assistant general storekeeper, Missouri-Kansas-Texas; W. M. Robertson, general storekeeper, Chicago & Eastern Illinois; M. F. Stewart, storekeeper, Norfolk & Western; C. E. Swanson, assistant general storekeeper, Chicago, Burlington & Quincy; J. E. Thraff, general storekeeper, Great Northern; G. D. Tombs, manager forest products bureau, Illinois Central; C. J. Vanderbosch, assistant general storekeeper, Baltimore & Ohio; A. C. Wagner, division storekeeper, Erie; W. H. Young, general storekeeper, Seaboard Air Line; B. T. Adams (chairman ex-officio), general storekeeper, Illinois Central.



A special steel skid, having four-way entry for forks of truck, is used in handling traction motors

Special skids and pallet boxes for handling journal bearings, soft piq metals and auto parts

Discussion

In connection with this report there was shown a movie made at the Rock Island's Silvis, Ill., general storehouse. This showed the Rock Island's material handling facilities, including overhead cranes and fork trucks with pallets and skids. Also filmed was that railroad's use of a fork truck with a small crane boom attached to the mast for handling car wheels.

R. E. Godley, assistant manager of stores, Illinois Central, said that while the committee had recommended several sizes of pallets as standards, that road had found the 48 in. by 48 in. pallet to be best suited to its purposes. Chairman Roberts said that the main reason for the recommended sizes was so the pallets could be made to fit into all sorts of transportation vehicles, including trucks, and that the 48 in. by 48 in. size was not well adapted to use in highway vehicles.

G. A. Goerner, general storekeeper, Burlington, said that materials handling was one of the most important subjects that the P. & S. Division had to deal with, since it offered so many chances for savings. Mr. Goerner said that if the railroads wanted to receive unit loads from their suppliers one of the things they would have to do was to get together and decide the exact form in which all the railroads could take those loads.

C. B. Neubauer, assistant to vice-president, Southern, cautioned the assembly against too hasty action in the use of pallets, i.e., in trying to get pallet loads shipped to them, since pressure was being put on the railroads to grant some sort of rate concession where pallets are used in shipping, and it was possible that the division might be placed in the position of advocating something which would cost the railroads millions of dollars in revenue if the concessions were granted.

The report was accepted subject to letter ballot.

Purchasing Department—Organization and Procedure

This committee reported that it believed many savings could be made by taking advantage of quantity price differentials "in the most economical quantities consistent with requirements." The group suggested that such savings might be made if stamps were placed on inquiries asking vendors to bid on quantities in excess of those specified, if lower prices applied to the larger quantities. It recommended that the purchasing department keep the stores department informed on materials subject to price differentials.

The report mentioned advantages to be gained from the use of modern office equipment such as electric typewriters, duplicating machines, calculators and automatic folding machines. Also, attention was called to the economies possible when form letters were used to handle subjects with vendors.

The last recommendation of this committee was that the heads of purchasing and stores departments of the various railroads assign a staff member to review the recommendations of the committee, after approval at the annual meeting, to the end that these recommendations be adopted, as far as possible.

Following are members of the committee: S. R. Secor (chairman), assistant general purchasing agent, Chesapeake & Ohio; E. V. Purdy (vice-chairman), purchasing agent, Texas & New Orleans; J. H. Baker, assistant purchasing agent, Canadian Pacific; R. Bostwick, purchasing agent and general storekeeper, Chicago, Indianapolis & Louisville; F. J. Casey, office manager, purchasing department, Chicago, Milwaukee, St. Paul & Pacific; H. A. Christ, assistant to purchasing agent, Wabash; H. M. Dewart, purchasing agent, Grand Trunk Western; C. A. Engelbrecht, chief clerk, purchasing department, Pennsylvania; James T. Healy, assistant to general purchasing agent, Atlantic Coast Line; J. U. King, assistant to general purchasing agent, Louisville & Nashville; C. J. Moisan, office manager—general purchasing agent, Illinois Central; F. W. Pettit, general purchasing agent, Western Maryland; D. D. Phillips, assistant to purchasing agent, Boston & Maine; R. I. Renfrew, assistant general purchasing agent, New York Central; O. T. Rhode, chief clerk to general purchasing agent, Union Pacific; W. S. Riach, assistant general purchasing agent, Atchison, Topeka & Santa Fe; R. F. Williams, assistant to purchasing agent, New York, New Haven & Hartford; M. E. Towner (chairman ex-officio), c/o purchasing department, Western Maryland.

S. R. Secor
Chairman

Discussion

In view of the recommendation of this committee that chief p. & s. officers should assign some member of their staffs to review the recommendations of the various committees with the thought in mind of applying as many of those recommendations as possible, J. S. Fair, Jr., purchasing agent, Pennsylvania, suggested that this group and the personnel of Committee 37 review the p. & s. Manual and make up a suggested curriculum for study by younger men coming up in the two departments.

C. F. Bayer, manager, purchases and stores, Delaware, Lackawanna & Western, said that he had thought so well of this committee's recommendations on taking advantage of quantity price differentials that he had gone ahead and made such requests on some price inquiries.

Standardization of Stores Stock

The committee presented, as usual, a list of items to be added to or taken from Standard Materials Lists. Since standardization of baggage truck sizes had come up at last year's meeting, this year's committee investigated and found that in the last two years 38 railroads had purchased—or manufactured in company shops—1,939 baggage trucks in more than 17 different sizes. Of those purchased (1,252), 29 railroads reported buying in 9 sizes, "some to the extent of

only fraction[s] of inches [difference] in width" from the more popular sizes. Eight different sizes of shop-manufactured trucks were reported by 8 railroads. The committee recommended that one size be adopted as A.A.R. standard, viz., 40 in. wide, 35 in. high and 120 in. long, with 28 in. wheels both front and rear, with type of tire or bearing optional. All others would be considered "special."

Other recommendations of this group were that steel rail be studied with a view to standardizing, cutting out some sizes where weight variation or punching of bolt holes is little different from the more widely used sizes. Other items suggested for study were journal box packing, switch stands, track drill bits and carpeting and upholstering for passenger equipment.

The committee also reported that the Anti-Friction Bearing Manufacturers Association had made considerable progress in providing a uniform method of identification for all types of bearings. A subcommittee report also stated that potential savings are possible if fiber or wood-rail shims are used in place of steel.

The committee members are as follows: R. W. Hall (chairman), traveling storekeeper, Louisville & Nashville; E. F. Chubb (vice-chairman), assistant general storekeeper, Pennsylvania; G. W. Alexander, purchasing agent, Central of Georgia; G. A. Belson, district storekeeper, Chicago & North Western; T. J. Clancy, district storekeeper, Great Northern; H. C. Crowder, division storekeeper, Northern Pacific; A. H. Evans, assistant to manager stores, Canadian Pacific; G. H. Flagg, supervisor materials, Baltimore & Ohio; J. B. Fraser, general storekeeper, Canadian National; B. Y. Heazlitt, purchasing agent, Kentucky & Indiana Terminal; C. A. Hoover, division storekeeper, Southern; G. J. House, classification inspector, Erie; W. H. Lloyd, general storekeeper, Chicago, Rock Island & Pacific; H. C. Miller, secretary to vice-president—purchases & stores, Illinois Central; C. J. Pearce, assistant general storekeeper, Southern Pacific; A. B. Sears, assistant general storekeeper, Atchison, Topeka & Santa Fe; C. E. Woodson, sectional storekeeper, Norfolk & Western; and C. L. Wakeman (chairman ex-officio), general storekeeper, Wabash.

This report was accepted subject to letter ballot.

Diesel Locomotive Parts — Purchasing and Storekeeping

For the past few years this committee's reports have contained information relative to the use of porous chrome cylinder liners. In this report it stated that several railroads had had experiences with such liners "which were interesting enough to justify enthusiasm and continued study." However, no recommendation was made regarding use of liners so treated, except that the 1949-50 committee was invited to give continued attention to this subject, and, if possible, make a definite recommendation next year.

This group found that a high percentage of plungers were being replaced in fuel injection units, but reached no conclusion as to whether this was due to actual wear or to the fuel stains which make visual inspection of the plungers difficult. The recommendation was made, however, that this problem be one assigned to committee 42 for study during the coming year. Also suggested for handling by the next committee was an examination of the possibilities for economies where railroads repair various makes of traction motor roller bearings. The Diesel Parts group made its recommendation after receiving information from two railroads which indicated that each was repairing about 800 bearings per year at a saving of $25 each over the cost of new bearings.

A. G. Bohorfoush
Chairman

Committee 42 asked that the group handling the Standard Material Classifications be instructed to analyze Diesel parts now carried indiscriminately in Class 26 so that some of the items might be put in proper classes, such as electrical equipment into Class 25, etc.

Segregation of lubricating oils is costing the railroads ten to fifteen cents per gallon, the report continued, which to some roads means thousands of dollars per month. Therefore, this committee asked the locomotive builders to consider running tests to determine what the results might be from the use of new mixed additive-type oils. It was suggested that succeeding Diesel Parts groups continue study of this question until a satisfactory solution to the problem is found.

The committee members are as follows: A. G. Bohorfoush (chairman), assistant general purchasing agent, Southern; I. G. Shapiro (vice-chairman), traveling storekeeper, New York, New Haven & Hartford; W. P. Brown, division storekeeper, Chicago, Rock Island & Pacific; E. A. Carlson, general storekeeper, Chesapeake & Ohio; P. E. Carlson, buyer, Chicago, Burlington & Quincy; H. R. Carroll, traveling storekeeper, Chicago & North Western; C. R. Clements, Diesel traveling storekeeper, Boston & Maine; P. T. Cronin, electrical buyer, Atchison, Topeka & Santa Fe; E. F. Delisle, general storekeeper, New York Central; E. M. Hickox, chief clerk to general storekeeper, Union Pacific; R. R. Kane, assistant general storekeeper, Louisville & Nashville; L. G. Kohler, storekeeper, Baltimore & Ohio; C. J. Kubler, general storekeeper, Kansas City Southern; Elmer Larson, division storekeeper, Denver & Rio Grande Western; John Lembach, purchasing agent, Florida East Coast; H. B. Nordstrom, assistant purchasing agent, Great Northern; R. H. Pauling, division storekeeper, Erie; C. E. Schnars, assistant general storekeeper, Pennsylvania; A. G. Denham, general storekeeper, St. Louis-San Francisco; T. W. Greenawalt, traveling storekeeper, Missouri-Kansas-Texas; J. R. Hellums, district storekeeper, Illinois Central; G. C. Sheridan, traveling storekeeper, Chicago, Milwaukee, St. Paul & Pacific; V. Y. Shoemaker, assistant purchasing agent, Gulf, Mobile & Ohio; A. A. Taylor, general purchasing agent, Missouri Pacific; and G. T. Wickstrom (chairman ex-officio), general purchasing agent, Union Pacific.

Discussion

Discussion following the presentation of this report brought out the opinion that there was not much consistency among the builders of Diesels. For instance, it was said, one builder insists that traction motor roller bearings be porous chromed while it says that doing the same to cylinder liners is a waste of money. Another builder does exactly the opposite. Therefore, said Chairman Bohorfoush, it will be some time before all the benefits of porous chrome plating are known.

In response to a question as to what sort of job the builders were doing in supplying spare parts, Chairman Bohorfoush said that generally the builders were keeping branch parts depots sup-

plied with all items whose national consumption yearly was more than six units. However, he said, builder parts managers are under pressure from their managements to keep inventories as low as possible, just as the railroad p. & s. departments were under similar pressure from their managements.

The report was accepted subject to letter ballot.

Loss and Damage Prevention — Salvage and Disposition

This group's report stated that purchases and stores officers could do much to help the loss and damage situation in two ways: (1) by assisting suppliers in improving packaging and loading methods; and (2) by directing the attention of the proper operating officers to bad handling on the part of the transportation department. For further consideration in any loss and damage prevention program by the division members, the committee suggested 5 points:

1. More care should be taken when "bad order" material—both company freight and salvage freight—is forwarded to disposal centers. Altogether too much material was badly handled simply because personnel knew it was on its way to a disposal center in "bad order";
2. Care should be taken to avoid damage to subsequent lading of cars due to previous leakage of oils or other liquids onto car floors;
3. Greater activity of p. & s. personnel in loss and damage prevention activities;
4. Each railroad department, including p. & s., should furnish to those in charge of salvage disposal a list of the major commodities which they are interested in inspecting for possible railroad use; and
5. The practicability of ordering in standard packages, since manufacturers design containers to suit standard quantities, and a partially filled container is a definite damage hazard in transportation.

A suggestion was made that railroads consider the practice of enclosing with purchase orders a separate message to stimulate better packing and shipping. This would be in the form of a flier or circular.

The committee recommended that this matter be referred to the Freight Claim Division for its views.

Having investigated the salvage practices of some 56 railroads, whose net claims for 1947 were more than $96 million and whose gross claims totaled more than $112 million, the p. & s. loss and damage prevention group found that salvage credits averaged about 17 per cent of gross claims, while individual road credits ranged from as low as 9 per cent to a high of 61 per cent. It was the opinion of the committee that those roads whose salvage credits were less than 17 per cent of gross claims should examine salvage disposal methods to see if maximum favorable results are being secured from this activity.

Following are the members of the committee: J. L. Layton (chairman), stores inspector, Pennsylvania; N. R. Hamilton (vice-chairman), division storekeeper, Central of Georgia; W. A. Clem, purchasing agent, Reading; H. Crouse, purchasing agent, Texas & Pacific; D. E. Dawson, general storekeeper, Gulf, Mobile & Ohio; and Clyde Cocke (chairman ex-officio), purchasing agent, Norfolk & Western.

The report was accepted as read.

Stores Department — Organization and Procedure

Last year a good part of this committee's report dealt with a suggested method for developing new men for key positions in the stores department. (No action was taken on this program last year, since the plan was not recommended.) According to the report, one railroad would have tried the program during the past year if it had had the moral support of the division's approval of the plan. Therefore, the committee recommended the adoption of the training program.

The training program, as proposed, would take a period of two years. An age limit of not more than 26 years was suggested. Trainees would spend two months each in 12 different types of stores or offices, including time in the purchasing agent's office, in the accounting department, the general storekeeper's office and a back shop store. Once the young man "graduated" he would be considered for the first available suitable vacancy in the stores department.

The members of the committee are: W. W. Shugarts (chairman), assistant stores manager, Pennsylvania; J. F. Duffy (vice-chairman), assistant manager stores, Erie; J. R. Beach, division storekeeper, Central of Georgia; C. E. Bulkley, general storekeeper, Missouri-Kansas-Texas; C. I. Cavenaugh, storekeeper, Atlantic Coast Line; N. B. Coggins, general storekeeper, Southern; L. H. Haynes, assistant general storekeeper, Seaboard Air Line; C. R. Holmes, general storekeeper, Atchison, Topeka & Santa Fe; L. F. Mahoney, chief clerk, Boston & Maine; C. H. McGill, general storekeeper, New York, New Haven & Hartford; T. E. Meehan, division storekeeper, Missouri Pacific; F. A. Murphy, regional storekeeper, Baltimore & Ohio; H. J. Smith, general storekeeper, Southern Pacific; C. N. Thacker, storekeeper, New York, Chicago & St. Louis; J. W. Trump, district storekeeper, Reading; and G. A. Goerner (chairman ex-officio), general storekeeper, Chicago, Burlington & Quincy.

Discussion

In the discussion several members brought up the fact that union agreements on their railroads seemed likely to preclude putting into effect the recommendations of this committee on the training program, especially in regard to considering the graduate for certain positions in the stores department. On some roads agreements with the unions would permit them to take action such as recommended by the committee. J. F. Duffy, assistant manager of stores, Erie, vice-chairman of the committee, said that he believed that in many cases the unions could be persuaded to go along with the proposed program in spite of agreements.

A number of members voiced objections to the practicality of the location method of stock arrangement, saying that it would in the long run take more space for storage of materials than the arrangement in alphabetical or numerical order. Some of the users of this system, which is essentially one of arranging stocks according to size, said that it was working very satisfactorily for them.

This report was accepted subject to letter ballot.

GENERAL NEWS

5 Months' Net Income Totaled $130,000,000

Net railway operating income was $250,774,199

Class I railroads in the first five months of this year had an estimated net income, after interest and rentals, of $130,000,000, as compared with $167,000,000 in the corresponding period of 1948, according to the Bureau of Railway Economics of the Association of American Railroads. The five-months' net railway operating income, before interest and rentals, was $250,774,199, as compared with $285,928,720 in the same period in 1948.

Estimated results for May showed a net income of $32,000,000, as compared with $65,000,000 for May, 1948, while the net railway operating income for the 1949 month was $57,595,281, as compared with $90,178,066 for May, 1948. In the 12 months ended with May, the rate of return averaged 4.1 per cent, as compared with 3.29 per cent for the 12 months ended with May, 1948.

Gross in the five months amounted to $3,633,821,631 compared with $3,768,613,307 in the same period of 1948, or a decrease of 3.6 per cent. Operating expenses amounted to $2,967,102,341 compared with $3,022,827,278 a decrease of 1.8 per cent. Thirty-three Class I roads failed to earn interest and rentals in the first five months of 1949, of which 13 were in the Eastern district, 5 in the Southern region, and 15 in the Western district.

Results in the East

Class I roads in the Eastern district in May had an estimated net income of $17,000,000 compared with $30,000,000 in May, 1948. In the five months, their estimated net income was $67,000,000 compared with a net income of $52,000,000 in the same period of 1948.

Their net railway operating income in May amounted to $30,366,197 compared with $43,238,837 in May, 1948. Those same roads in the five months had a net railway operating income of $134,209,758 compared with $109,701,676 in the same period of 1948.

Gross in the Eastern district in the five months totaled $1,690,785,705, a decrease of 2.1 per cent compared with the same period of 1948, while operating expenses totaled $1,366,288,543, a decrease of 3.5 per cent below 1948.

Class I roads in the Southern region in May had an estimated net income of $4,000,000 compared with $9,000,000 in May, 1948. In the five months, their estimated net income was $29,000,000 compared with a net income of $36,000,000 in the same period of 1948.

Those same roads in May had a net railway operating income amounting to $8,416,796 compared with $12,983,949 in May, 1948. Their net railway operating income in the five months amounted to $47,879,462 compared with $55,983,806 in the same period of 1948.

Gross in the Southern region in the first five months totaled $519,188,219, a decrease of 5.5 per cent compared with the same period of 1948, while operating expenses totaled $412,489,267, a decrease of 3 per cent below 1948.

Western Net Down

Class I roads in the Western district in May had an estimated net income of $11,000,000 compared with $26,000,000 in May, 1948. Their estimated net income in the five months was $34,000,000 compared with $79,000,000 in the same period of 1948.

CLASS I RAILROADS UNITED STATES

	Month of May 1949	1948
Total operating revenues	$ 741,068,551	$ 796,402,811
Total operating expenses	600,852,442	616,231,264
Operating ratio—per cent	81.08	77.38
Taxes	69,181,314	75,966,676
Net railway operating income (Earnings before charges)	57,595,281	90,178,066
Net income, after charges (estimated)	32,000,000	65,000,000
Five Months Ended May 31, 1949		
Total operating revenues	$3,633,821,631	$3,768,613,307
Total operating expenses	2,967,102,341	3,022,827,278
Operating ratio—per cent	81.65	80.21
Taxes	349,410,878	388,546,053
Net railway operating income (Earnings before charges)	250,774,199	285,928,720
Net income, after charges (estimated)	130,000,000	167,000,000

Their net railway operating income in May amounted to $18,812,288 compared with $33,955,280 in May, 1948. Those same roads in the five months of 1949 had a net railway operating income of $68,684,979 compared with $120,243,238 in the same period of 1948.

Gross in the Western district in the five months of 1949 totaled $1,423,847,707, a decrease of 4.6 per cent compared with the same period of 1948, while operating expenses totaled $1,188,324,531, an increase of 0.6 per cent above 1948.

Says Seaway Can't Be Made Self-Liquidating

W. J. Kelly reports on analysis of claims

Because very little of the toll revenue predicted in Department of Commerce reports on the project would actually be realized, the proposed St. Lawrence seaway could not be made self-liquidating, according to an analysis of the department's estimates made by a committee headed by Walter J. Kelly, traffic officer of the Association of American Railroads. The analysis, on which Mr. Kelly has made a report, covers principally the department's December, 1948, report on "Potential Traffic on the St. Lawrence Seaway," but it deals, too, with a 1947 report entitled "An Economic Appraisal of the St. Lawrence Seaway Project," also made in the department.

Resolutions pending in Congress for approval of the United States-Canada agreement for construction of the St. Lawrence project contemplate that the seaway would be self-liquidating. They are thus like the resolution which the Senate committee on foreign relations of the previous Congress reported favorably to the Senate only to have it sent back for further study. The committee thereupon called upon the Commerce Department to make a report which, among other things, would show: (1) "The estimated tonnage which will use the St. Lawrence seaway . . . with a view to determining if the proposed new deep-water navigation works on the St. Lawrence river can be made self-liquidating by charging tolls"; and (2) "An analysis of the estimated traffic on the St. Lawrence seaway . . . with a view to determining its effect on various areas in the United States."

The December, 1948, report supplied the department's answers. It gave estimates of potential traffic on the seaway and followed through from them to calculate that the annual revenue from tolls would total from $36.5 million to $49 million. Mr. Kelly summarized the department's breakdown of the $49 million in this way: "$29.2 million is to come from iron ore, grain, bituminous coal and petroleum and the balance from general cargo. Of the $19.8 million to come from general cargo, $8.6 million is assigned to 'residual general cargo traffic,' the nature of which is not set forth in detail in the report and $3 million is assigned to 'ballast.' The balance, as-

Members and staff of the United States National Commission in the Pan American Railway Congress Association, photographed at their first meeting in Washington, D. C., on June 21 are, left to right: J. A. Little, transport analyst, Bureau of Transport Economics and Statistics, Interstate Commerce Commission; A. E. Lyon, executive secretary, Railway Labor Executives' Association; George P. Baker, professor of transportation, Harvard University Graduate School of Business Administration; H. H. Kelly, assistant director, Office of Transport and Communications, Department of State; J. M. Hood, president, American Short Line Railroad Association; William T. Faricy, president, Association of American Railroads, and chairman of the commission; Willard L. Thorp, assistant secretary of state; James G. Lyne, editor, *Railway Age*, and president, Simmons-Boardman Publishing Corporation, and Walter S. Abernathy, executive secretary of the commission and special assistant in the Transportation and Communications Branch, Office of International Trade, Department of Commerce. Members of the commission not shown in the photograph are Secretary of Commerce Charles Sawyer and I. C. C. Chairman Charles D. Mahaffie

signed to general cargo, is set forth in detail in the report and consists principally of manufactured iron and steel, automobiles, parts and accessories, wheat flour, sugar and coffee."

Mr. Kelly's report consisted of a summary statement and five appendices, the latter dealing specifically with the classes of traffic covered by the Commerce Department survey. At the outset of his summary statement, the A.A.R. traffic officer noted that the department "apparently" has abandoned the general idea that ocean-going vessels carrying bulk cargo will use the proposed channel and dock at ports on the Great Lakes. This was "probably" in recognition of testimony given at 1946 hearings before a subcommittee of the Senate committee on foreign relations, Mr. Kelly suggested. It will, he added, "be a severe blow to the hopes of those who visualized converting lake ports into seaports."

Transshipment at Montreal

He went on to point out that the Commerce Department now assumes that "bulk commodities will be handled to and from Montreal in the type of vessel now operating on the Great Lakes and transshipped at that port." Here are cited statements in the 1947 report which said that ore would be transferred to lake carriers at Montreal or some other St. Lawrence port; that grain would be handled down the seaway in lake freighters; that bituminous coal would be carried by "large lake freighters"; and that petroleum would move in lake tankers.

In the December, 1948, report Mr. Kelly found it still "assumed" that ocean vessels carrying general cargo would sail directly up the seaway; but he pointed out that the report went on to say that the channel planned for the seaway would not be deep enough to handle the ore carriers and tankers now being constructed for ocean service. In that connection, however, the department found that the transshipment expenses for these commodities at Montreal would be comparatively small.

As to the assumption that general-cargo vessels in ocean service would use the seaway, Mr. Kelly conceded that the proposed channel would accommodate "some" of the war-built merchant vessels which are now engaged in foreign service. At the same time he cited figures in the December, 1948, report which indicated that "of the 19 types of such war-built merchant vessels, only 4 types have loaded draft of less than 27 ft." And he noted that "all but 9 of the 1,693" presently available liberty ships draw from 27 to 29 ft.

Mr. Kelly said later on that any consideration of the possibility of handling ocean-going steamships on the proposed channel must take into account the controlling depths of water in channels at United States Great Lake ports. He put these depths at a range of from 12 ft. at Lorain, Ohio, to 25 ft. at Detroit, Mich., and Toledo, Ohio. At Chicago, Milwaukee, Wis., and Cleveland, Ohio, the controlling depth is 21 ft., while at Duluth, Minn., Superior, Wis. and Buffalo, N. Y., it is 20 ft. Mr. Kelly also gave the controlling depths in connecting channels—20 ft. on the St. Marys river and 21 ft. on the Detroit and St. Clair rivers.

He referred next to that part of the December, 1948, report which recorded a concession by the Secretary of Defense that present lake harbor and channel facilities would not accommodate ocean-going merchant vessels of the draft used in the Commerce Department estimates, but which then quoted the Defense Secretary as having said that the lake port cities "will no doubt be eager to deepen channels and harbors as well as provide facilities necessary to accommodate the additional shipping business which would be available to them if the seaway were constructed." Mr. Kelly found it "questionable" whether it would be "practical" for the lake port cities to provide additional pier facilities "even if they were disposed to spend the money." At some of the ports, he explained, the connecting rivers on which the existing piers are located "traverse highly congested areas and large vessels cannot move very far up these rivers because of clearances and restrictions against opening of highway and railroad bridges." Meanwhile, the A.A.R. traffic officer had pointed out that some Great Lakes ports are already served by general-cargo water carriers, including lines providing direct sailings to Europe.

Direct Service Now Available

"There is," he said, "now regular service by the Canadian Steamship Company for general cargo between Montreal and Canadian ports on the Great Lakes, using vessels that can negotiate the existing channels. These vessels handle general cargo of the kind the department has in mind for the proposed channel. There is no reason why a similar service could not be established between Montreal and United States Great Lakes ports on the present canals, if it should develop that there is necessity for such service. General cargo requires frequent service. Larger ships operating less frequently would attract less, rather than more, general cargo.

"It would be reasonable to assume that ocean-going vessels would transfer general cargo at Montreal to the types of vessels that can negotiate the existing canals and thus avoid the delay and expense which would be involved in sending the larger type vessels through to Great Lakes ports; and, what is more important, in that way they would avoid payment of tolls on the proposed channel. . . .

"Direct Great Lakes-European general cargo service was resumed with the opening of navigation in 1949. Fjell Line boats leave lake ports every two weeks to continental Europe and every 18 days to Scandinavian ports. Swedish-American Line boats leave every 15 days to Scandinavian and Baltic ports and one a month to Central American ports. Oranje Line boats leave lake ports every 10 days to Antwerp, Amsterdam and Rotterdam. Swedish Chicago Line has service about every 15 days to Scandinavian

ports. All of these lines can and do use the existing canals."

"Potential" vs. "Prospective" Tonnage

Calling it "notable" that neither of the Commerce Department reports under consideration made reference to coastwise and intercoastal traffic, Mr. Kelly suggested that the department "apparently" now concedes that none of this traffic will move on the proposed channel subject to tolls. He went on to emphasize that the two reports, like previous ones from the department, deal in "potential" rather than prospective tonnages, the former including generally "an estimate of all possible traffic now moving or that may move in the territory under consideration." Thus traffic moving by other means of transportation, including other waterways, becomes part of the "potential."

On that basis, the December, 1948, report gave "little weight," as Mr. Kelly put it, to the "very substantial tonnage that for years has moved on the existing St. Lawrence canals"—7,378,000 tons in 1948. This traffic, the A.A.R. traffic officer continued, consisted principally of commodities "which constitute the bulk of the traffic . . . from which it is expected there would be derived annual revenue of nearly $50 million in tolls." That such traffic would be handled on the proposed channel subject to tolls, he added, "is at least doubtful," because the toll system under consideration "contemplates that traffic using the existing canals would be toll free." It would be "more reasonable," he suggested "to assume that, as the existing canals are to be available without tolls, no great amount of traffic would be handled on the new channel subject to tolls."

Noting that the general cargo traffic included in the December, 1948, report's assumptions would be traffic which now moves through North Atlantic United States ports, Mr. Kelly made this comment: "Aside from the disastrous effect that such a shift in traffic away from the United States North Atlantic ports would have on the economic welfare of those ports and the ability of the railroads to continue to operate as contemplated by the declaration of policy in the Transportation Act of 1940, the question arises whether the amount of traffic diverted to the Canadian port of Montreal would exceed the pier and handling capacity of that port. There is also in this report no answer to the question of whether the railroads and the United States ports could or would maintain stand-by facilities to handle the traffic during the period when the waterway serving the Canadian port is not navigable."

Iron-Ore "Potential" Over-rated

In the first appendix to his analysis, Mr. Kelly deals with the "potential" iron-ore traffic which the department put at 30 to 37.5 million tons a year. This would be the largest producer of the "potential" toll revenues yielding from $15 million to $18 million a year. It was indicated that approximately 10 million tons of the iron ore may be expected to come from the Labrador area and the balance, approximately 27.5 million tons, from other foreign sources. Both assumptions are based on the thought that new sources of ore must be sought by the steel industry in the Great Lakes area because of the depletion of the "high grade" ore reserves in the Lake Superior region.

In the latter connection, Mr. Kelly cited the latest annual report of the director of the Bureau of Mines to support a conclusion to the effect that "the process of beneficiating the low-grade ores available in almost inexhaustible quantity in the Lake Superior area should insure a supply of iron ore for the steel industry in the Great Lakes area." The A.A.R. traffic officer nevertheless proceeded on the basis of an assumption that the Great-Lakes-area steel industry might have to look to new sources of iron ore; and even then he found little "potential" ore traffic for the proposed seaway.

His conclusion as to the Labrador ore was that it would go first to Canadian furnaces at Sydney, N. S., and Hamilton, Ont., and Port Colborne. "The balance of the supply available in that area," he also found, "probably would go to furnaces in Maryland, Pennsylvania and New York. Most of this ore would be discharged from ocean-going vessels at Baltimore, Md." These eastern furnaces were called "logical markets" for the Labrador ore. "Ore that is at tidewater at Seven Islands, Que.," Mr. Kelly explained, "could move in large cargo vessels to Baltimore throughout the year. . . . This would tend to influence the movement of such ore as is made available at Seven Islands to Baltimore rather than up the St. Lawrence, because the St. Lawrence is closed to navigation approximately five months in each year."

Dealing with the ore which the department assumed would originate in South America, Mr. Kelly found that none of it would move on the proposed seaway. He summed up that situation in this way:

"Having in mind the disadvantages in the water distance for the round trip to Montreal over Baltimore, the cost of transfer at Montreal and the water movement to a lake port . . . it is hardly probable that any ore from South America will move to Montreal for transfer to lake vessels for movement up the St. Lawrence to the Great Lakes area. South American ore intended for furnaces in the United States, Pittsburgh and east, undoubtedly would discharge at Baltimore. If it should ever become necessary to supplement Lake Superior ore in order to supply the needs of the furnaces west of Pittsburgh by bringing in South American ore destined to those furnaces, probably such ore would come in ocean vessels which would dock at New Orleans, La., where the ore would be transshipped to barges and move up the Mississippi, Ohio and Illinois rivers to the very back door of these furnaces. Bauxite ore, used in the manufacture of aluminum . . . is handled through the port of New Orleans in this manner."

In like manner Mr. Kelly disposed of the department's estimates of the "potential" traffic of other classes. The other appendices to his analysis, as he summarized them, demonstrated in turn that "no Far Eastern or South American crude petroleum would move on the proposed channel"; that "the existing St. Lawrence canals are adequate to handle the potential water-borne coal traffic from United States destined to Quebec"; that "the long-established methods of handling export grain are adequate, flexible and economical and that construction of the proposed channel would result in neither an additional export movement nor a reduction in transportation rates which would offset the proposed tolls"; and that the method used by the department in estimating the general-cargo traffic "results in an overestimate of potential tonnage and revenue from tolls," while the cost of handling general cargo on the proposed channel "has been overstated."

44.4 Per Cent of Cars Returned to Home Lines

Better box car supply to meet coming seasonal loadings

With the arrival of the seasonal increases in loadings, the box car supply is better than it has been at any time since before the war, Chairman Arthur H. Gass of the Car Service Division, Association of American Railroads, said in his latest monthly review of the "National Transportation Situation." Because the railroads have been "concentrating whole-heartedly" on handling equipment in accordance with Car Service Rules, Mr. Gass said, 44.4 per cent of the total box car ownership as of May 15 has been relocated to home roads, which is only slightly under the pre-war situation.

Improvements in railroad facilities and in elevators and other terminal facilities at the principal markets, he continued, will expedite the movement and unloading of cars and thereby shorten the turn-around time, thus making it possible to "handle substantially" more grain with fewer cars this season than in former years. As he has pointed out before, Mr. Gass said again that the problem this season with respect to the grain movement will be one of storage

rather than car supply. But, he added, the principal southwestern grain roads "have taken no chances" of having insufficient box cars available to meet the demands, and early this spring these lines built up their supply higher than had ever before been accomplished. The box car supply to protect the agricultural products movement has been built up without resort to special car orders as in the past years, the C.S.D. chairman said.

Like the grain movement, the task of handling this season's cotton crop also presents a storage problem, Mr. Gass said. There is in port storage a surplus of cotton bales from last season's production, which is more than enough to meet export demands for this season, he continued, and the cotton in the hands of consuming establishments is equivalent to requirements for several months under present textile activity. In addition, the government now has over five million bales of cotton in public storage, he added, and it is "obvious" that securing storage space rather than box cars will be the problem with respect to this season's cotton harvest.

Mr. Gass said that the watermelon movement from the southeast is "progressing satisfactorily," and will reach its peak possibly the first part of July. Originating roads, he continued, are not permitting the loading of ventilated box cars with any commodity except watermelons, and terminating lines are policing the handling of this equipment at principal markets to insure prompt unloading and expeditious return of empty cars to the loading district.

The loading of revenue coal during recent weeks has continued at about the same levels as during April and May, Mr. Gass noted. Because of the suspension of mining operations in both anthracite and bituminous fields during the week June 13-18, inclusive, with an estimated loss of about 125,000 cars of revenue coal, he added, the 1949 loadings may be expected to show a further decrease compared with 1948 and 1947. Continued "good progress" is reflected in the fulfillment of the lake-coal and ore programs which are somewhat ahead of 1948, Mr. Gass reported. He noted, however, that bituminous coal production to June 4 this year was approximately 7 per cent below the same period last year while the anthracite production to June 4 was 28 per cent below the same period last year.

The hopper car situation continues "easy," Mr. Gass said, and no shortages of any consequence have been reported since the first of the year. There still exists, he added, a "moderately heavy" demand for long flats, particularly for loading in the midwest. As to heavy duty flats, he urged these cars be given expeditious handling as the number owned is limited and the demand very heavy. Loadings of covered hoppers, he added, are ahead of last year, largely due to the increase of 3,850 in ownership as well as heavier demands for this type car.

Of the refrigerator car supply, Mr. Gass said it is "sufficient" for the current requirements in all areas. He noted, however, that there are no surplus cars in the loading districts and with the increasing heavy loading in California and Arizona, a good movement of empties to the west coast must be maintained.

The report's figures on the average turn-around time of freight cars showed that this was 15.10 days in May as compared with 13.27 days in May, 1948.

Also included in the report was a warning to shippers who are disregarding provisions of the Mexican embargo by consigning export shipments for which they have no permit to brokers or others at the border points. "Shippers resorting to this practice in the expectation that Mexican-owned cars will be available into which shipments may be transferred and forwarded under a general permit covering shipments loaded in Mexican-owned cars, railroad or private, will probably experience delay and in most instances additional expense," Mr. Gass said. He also quoted an advertisement being run by the National of Mexico in Mexican newspapers to call the situation to the attention of importers in that country.

I. C. C. Trims Request For Rules Authority

Now asks it only as to rules relating to signals and radio

Without abandoning its quest for authority over all railroad operating rules, the Interstate Commerce Commission has nevertheless retreated a bit, and is now recommending that the proposed grant of such authority be eliminated from pending legislation to broaden the Interstate Commerce Act's section 25 which includes provisions of the so-called Signal Inspection Act of 1937. As modified by "clarifying" amendments suggested by the commission, the proposed legislation would still give the commission authority to require the installation of radio and other train-communication systems, but its authority to prescribe train-operating rules would be confined to rules "in connection with" such installations and installations of the signaling devices over which the commission already has authority under the present law.

RAILROAD MAPPED IN PLEXIGLAS—A mural map recently installed in the office of Stationmaster T. L. Hawkes at New York's Pennsylvania Station reproduces the entire Pennsylvania system and connections. Designed and executed by Raymond Loewy Associates, the map makes ingenious use of "built-in" edge-lighting provided by fluorescent acrylic plastic. Although the map is not lighted, the route lines stand out like tiny neon tubes. The base of the map, the outside dimensions of which are 12 ft. 4 in. by 7 ft., is ¾-in. plywood, on which artists painted symbols designating products or industries of states and sections of states. Trackage is defined by the glowing edges of strips of fluorescent Plexiglas, a product of the Rohm & Haas Co. Plastic strips ¼-in. thick show where the road operates its through sleeping cars. Other railroads over which these cars travel are shown in dotted Plexiglas, an effect achieved by routing shallow "dimples" in the top edge of the strip, then painting the dots. Thinner plastic represents the feeder or branch lines. The acrylic strips were heated, then curved to the design specifications against plywood forms which had been sawed to the desired curvatures. To attach the plastic to the plywood, the strips were drilled at junction points and at the locations of major cities; fine nails were driven in these holes, and each nailhead was covered neatly with a disk sawed from a thin rod of black Plexiglas. These black dots, contrasting with the glowing red edges, help to locate major cities quickly and easily

Commissioner Splawn, chairman of the commission's legislative committee, proposed the "clarifying" amendments at a July 6 hearing before the Senate interstate and foreign commerce subcommittee which is considering the proposed legislation as embodied in S.238, the bill introduced by Senator Johnson, Democrat of Colorado, who is chairman of the subcommittee's parent committee. Senator Myers, Democrat of Pennsylvania, is chairman of the subcommittee.

As to the proposal to grant it general authority over all operating rules, which the "clarifying" amendments would eliminate, Commissioner Splawn said the commission now believes that this "should be taken up in another bill," and that section 25 "should be kept a device section." At the same time, he said that the commission still stood on a January 17 letter which he wrote on its behalf to Senator Johnson for the purpose of endorsing the bill as introduced. That letter, Mr. Splawn explained, still covers the commission's endorsement of the "main objectives of the bill."

The immediate reaction of J. Carter Fort, vice-president and general counsel of the Association of American Railroads, with respect to the amendments suggested by Commissioner Splawn was that they would "improve the bill a great deal," but would not bring it to a point where the railroads could "go along with it." The commission's present section-25 authority to require the installation of signaling facilities does not include authority to prescribe train-operating rules in connection with such installations. Although he said he had not decided whether he would do so, Mr. Fort obtained permission from Subcommittee Chairman Myers to file a statement commenting on the commission's presentation, which included statements from Commissioners Patterson and Johnson as well as Commissioner Splawn's testimony.

May Already Have Authority

In the course of his statement, Commissioner Johnson suggested that the commission may already have authority to require the installation of radio and other train communication systems under the language of the present section 25 which grants authority over specified signaling facilities—"or other similar appliances, methods, and systems. . ." Commissioner Patterson's statement was substantially the same as the one he made recently before a House interstate and foreign commerce subcommittee which has under consideration a similar bill, H.R.378.

This earlier presentation by Mr. Patterson was reported in the *Railway Age* of July 2, page 46, where it was noted that his statements to the effect that railroad operating rules are not observed were challenged by two railroad presidents—F. G. Gurley of the Atchison, Topeka & Santa Fe and J. B. Hill of the Louisville & Nashville. The charges which Messrs. Gurley and Hill undertook to answer were made by Commissioner Patterson, for the most part, in answers to questions from members of the House subcommittee.

No such detailed questioning about the matter developed at the Senate subcommittee's hearing this week, but the commissioner's prepared statement again included this sentence: "Some of the rules are good, but are not observed or enforced." He made much the same comment later on in response to a question from Senator Johnson who asked if the railroad operating rules were not "pretty well" calculated to promote safety "if they are lived up to." Mr. Patterson's reply was in the affirmative, but he added that some of the rules "might be improved," and "some might be better enforced."

In reading to the Senate subcommittee that part of his statement which expressed his doubt that any railroad would now desire to have any existing safety legislation repealed, Mr. Patterson noted an exception. He recalled that President Hill of the L. & N. had told the subcommittee that "better results" would ensue from repeal of section 25 than from enactment of S.238. Mr. Patterson also elaborated on that part of his earlier statement which had denied that all track motor cars are "small and easily removed from the tracks." The railroads, he said, now couple two or three track motor cars together to haul ties and other material, thus making them "a substitute for a small work train." He added that "it's just as easy to get a locomotive off the track as a group of coupled track cars."

Senator Johnson asked Commissioner Patterson if President Truman had taken an interest in S.238, and the commissioner replied that the President "over a period of years" has taken an interest in matters relating to railroad safety. He added that the commission had "some correspondence with the White House" about the matter. Senator Johnson pressed for a more specific answer, asking if the President had "expressed himself on this bill." "I can't say he has," Mr. Patterson replied, adding that when the President, "some years ago," inquired about the matter of railroad safety, the commission told him that legislation like that proposed in S.238 would be desirable.

Senator Tobey, Republican of New Hampshire, asked if enactment of the bill would give the railroads an additional "talking point" with which to advertise the safety of their operations. Mr. Patterson said it would, adding: "That's exactly what they did when we required them to put in train control. They began to advertise the advantage of it."

Commissioner Splawn, who followed Commissioner Patterson, first explained how the commission reached its decision to propose the "clarifying" amendments. As chairman of its legislative committee, he said, he had suggested that the commission hold a conference for further consideration of the bill. He decided to make that suggestion after reading the testimony offered at the previous hearings. The conference was held July 5, and the commission there prepared the amendments which, as Mr. Splawn put it, are designed to "make clear the intent of the commission" as to the authority it seeks.

Proposed in 1946 Report

Mr. Splawn went on to tell the subcommittee how the commission reached its original decision to recommend the broadening of section 25, which was first proposed in its 1946 annual report. Some serious railroad accidents of that year focused the commission's attention on the matter, he said. "The whole country was aroused by these terrific and appalling catastrophes," he added. He proceeded to explain that the commission recognized that the public demand for speed was such that the railroads would have to operate their trains on faster schedules. Thus the decision to seek additional regulatory authority for the purpose of promoting safety of operations.

Senator Myers was interested in that phase of the accident-reporting rules, which, as he understood it, did not require counting as fatalities persons whose deaths from injuries received in railroad accidents occurred more than 24 hours after such accidents. The senator thought such a rule might result in understating actual fatalities. Commissioner Splawn conceded that the 24-hour feature was "arbitrary," but thought it was "reasonable." While he agreed to file the accident-reporting rules for the record, it was his recollection that fatalities occurring after 24 hours are recorded in the month-

"Point of No Return"

"There is a single great fear in this country and that affects the railroads as it does every other industry and every individual. That fear is that our present-day economic problems may get political answers. Should such a thing come to pass, it will result in a race as to whether we go broke or enter a socialistic state.

"The correct answer to these questions will determine how we shall actually be living in the days ahead. We are approaching what in aviation is known as the 'point of no return.' Once that point is reached we can't turn back. Before we get there we've got to make up our minds whether or not we will continue on the path to statism and the planned economy which plans for everything but economy, or whether we will return to the enterprise system which made this country great. Once we pass that point our experience cannot be different from the experience of other countries which have made the same insane journey."

— Arthur H. Gass, chairman, Car Service Division, Association of American Railroads, in an address to the Great Lakes Regional Advisory Board at Toledo, Ohio.

ly reports of accidents. Meanwhile, the commissioner filed several other statements, including figures showing casualties and other information with respect to railroad accidents of recent years.

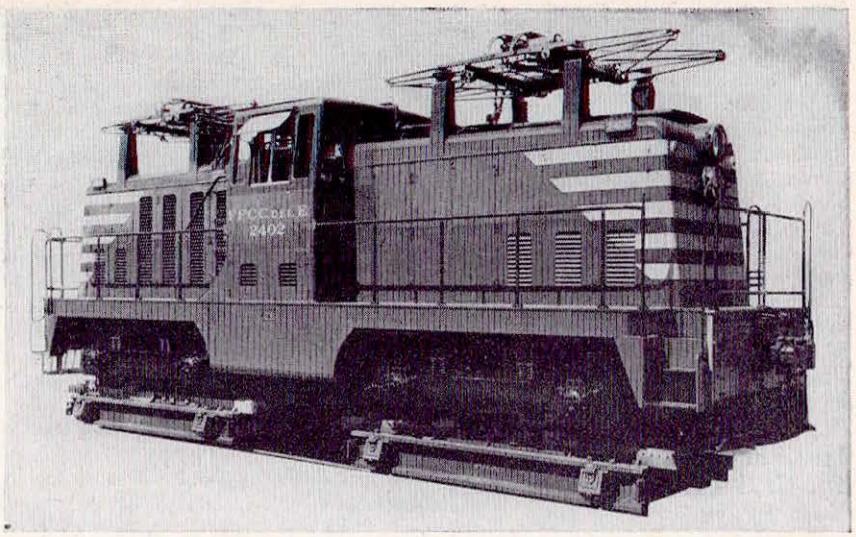
Commissioner Johnson first expressed his belief that Congress and the commission have been "negligent" on the matter of railroad safety "in general." He pointed out that existing safety laws relate to specific matters, such as ash pans, locomotives, and signaling facilities. Colonel Johnson thought the commission should have "general supervision" over railroad safety, but he agreed with the present commission position, as stated by Commissioner Splawn, that the "general" authority should be granted in a separate act.

Senator Reed, Republican of Kansas, asked Colonel Johnson if he favored transfer of the commission's administrative functions, such as those relating to safety and car service, to the Department of Commerce, as recommended in one of the reports of the Hoover Commission. That gave the colonel an opportunity to advocate again the creation of a department of transportation headed by a secretary with cabinet rank. Only in that way, he said as he has before, will transportation get the attention it requires. "Transportation," the colonel added, "is on the rocks and I don't mean only the railroads." His specific answer to Senator Reed's question was that the transfer of the administrative functions to the Department of Commerce would be "a feeble step in the right direction."

Against Hoover Group Plan

Senator Reed had previously asked the same question of Commissioner Patterson who replied that he was against the Hoover Commission proposal. The senator then recalled Commissioner Johnson's advocacy of a department of transportation, and Commissioner Patterson said he was "against that, too." The senator next suggested that the growth of the commission's administrative functions may have left it without time to perform efficiently as the quasi-legislative and quasi-judicial body it was originally intended to be. Commissioner Patterson said he was not prepared to discuss the matter at length, but he did point out that the commission's jurisdiction over safety matters dates back to 1893.

Senator Myers asked if "any benefit" would result from adoption of the Hoover Commission's recommendation. Commissioner Patterson replied that he couldn't see "any advantage to anybody, except perhaps the Department of Commerce." Senator Myers closed the discussion with a reference to discussions he has had with business men who have told him they prefer to confine their dealings with the federal government to one agency, if possible. The senator suggested that the railroads might well feel the same way, and thus prefer to have all regulatory matters left with the commission.



This dual-purpose, 3,000-volt, direct-current locomotive has been built for the Chilean State Railway by the General Electric Company in its Erie, Pa., plant. For road service the locomotive is designed to operate with power being supplied to the four GE-754 traction motors directly from the 3,000-volt, d.c., overhead line. In this service they have an hourly rating of 1,500 metric hp. and a continuous rating of 1,285 metric hp. In switching service, the motors operate at 1,500-volt d.c. power supplied by a dynamotor-generator set which obtains power from the 3,000-volt overhead line. Each locomotive has two operating stations, two pantographs, is 41 ft. long and has a maximum permissible speed of 80 kilometers per hour

Robertson Spends Week in Reviewing Wage Agreements

A recounting of the history of current basic daily wage rates and a summary of the provisions of existing local and national agreements between the Brotherhood of Locomotive Firemen & Enginemen and various railroads constituted the bulk of the testimony presented last week by David B. Robertson, B. of L. F. & E. president, to the Presidential "fact-finding" board which is hearing the union's request for an extra fireman on Diesel-electric locomotives (see *Railway Age* of July 2, page 45).

Mr. Robertson, discussing the developments which led to the present demands of the B. of L. F. & E., said: "Notwithstanding the fact that B. L. F. & E. agreements in the eastern, western and southeastern regions definitely provided that the firemen (helpers) on multiple-unit Diesel-electric locomotives in high-speed, streamlined or main line through passenger trains should remain in the cabs of such locomotives at all times while their trains were in motion, such fireman were spending considerable time in the motor rooms, frequently under instructions of the engineer and often with the acquiescence of supervisory officials. Furthermore, maintainers, supervisors, road foremen of engines, traveling engineers, traveling firemen and instructors were performing work customarily performed by firemen in the motor rooms of Diesel-electric locomotives in violation of our agreements. The managements of some railroads had issued instructions requiring brakemen on freight trains to occupy the cabs of Diesel-electric locomotives for the purpose of keeping a lookout while the fireman was absent in the performance of his duties in the motor rooms."

An increase in the number of Diesels weighing less than 90,000 lb. on drivers used in yard service, on which the assignment of a fireman (helper) is not required under the terms of previous agreements became, Mr. Robertson said, "a matter of considerable concern to engine service employees, because the operation of any engine on a railroad without the presence of two men in the cab is hazardous and unsafe." Also, he added, "our conviction that the oil and electric [wage] differentials are, and always have been, unsound, inequitable and without justification, impelled us to continue our efforts to destroy those differentials. The provisions of our agreements respecting manning of rail motor cars were never completely satisfactory, and became increasingly unsatisfactory as time went on. The original motor car was a self-contained unit and was not designed to haul other cars. We reluctantly agreed in 1943 and 1944 to exclude from the definition of 'locomotive' rail motor cars which handle other cars, the purpose being to permit them to haul perhaps one passenger coach.

"We soon found . . . that the railroads were re-designing some of their rail motor cars so as to enable them to haul freight trains. And pursuant to the literal language of the agreements, but contrary to their intended purpose, the railroads were operating these trains with only one engineer in the operating cab. . . We regarded it as desirable to move to modify the provisions of our agreements applicable to rail motor cars. Our proposi-

tion is that rail motor cars shall be regarded as locomotives if they haul other cars, have been constructed since March 15, 1937, or have been made more powerful since that date."

George W. Taylor, chairman of the three-man "fact-finding" board, announced at the conclusion of the July 1 session the receipt of a request by A. Phillip Randolph of the Brotherhood of Sleeping Car Porters for permission to intervene in the proceedings and present testimony. The board, Mr. Taylor said, "will accept from the representatives of the sleeping car porters a brief . . . stating the reasons why it feels it should intervene."

Low Fare to the Fair On C. & E. I.; Kids 50 Cents

The Chicago & Eastern Illinois is experimenting with special low passenger fares to Chicago, featuring the Railroad Fair, from 22 stations on its lines in Illinois and Indiana. The adult round-trip excursion rate is formed by adding 25 cents to the one-way fare; for children, the round trip is a flat 50 cents from all points.

The first excursion fare was offered on June 27 from Terre Haute, Ind., that day being featured as "Terre Haute Day" at the Fair; 156 adults, accompanied by 15 children took advantage of a round-trip rate of $4.75, which compares with the regular round-trip fare of $8.10. The tickets are good on designated morning trains going, and may be used returning anytime within five days.

"We are watching the results of this excursion," C. M. Roddewig, president of the C.&E.I. said; "it may well be that we will learn something helpful to not only the C.&E.I., but other railroads as well."

The special rates will be effective from 21 other stations—in each case on the day designated in the city's honor at the Fair—on consecutive Mondays and Thursdays until September 15.

Allegheny Board Discusses Problem of "Dirty" Cars

The problem of "dirty" freight cars was the major subject of discussion at a joint meeting of the executive and railroad contact committees of the Allegheny Regional Advisory Board held at Pittsburgh, Pa., on June 23, with W. W. Larkin, traffic manager, Continental Foundry & Machine Co., Wheeling, W. Va., presiding. To point up the importance of the problem, W. W. Patchell, general manager, Central region, Pennsylvania, stated that railroads in the board's territory are cleaning approximately 2,000 cars per day, with an average expenditure of about $6.19 per car, or $3,714,000 per year.

J. W. Hoover, general traffic manager, Carnegie-Illinois Steel Corporation, told the executive committee that the primary responsibility for clean cars lies with the receiver, who should see that cars are completely unloaded before turning them back to the railroad. J. F. Davis, traffic manager, Babcock & Wilcox Tube Co., reporting for the car efficiency committee recommended a three-point plan for reduction of the number of dirty cars; and the suggestion was made that an illustrated pamphlet be prepared and distributed nationally to the men who control, and do, the unloading of cars.

The legislative committee report, presented by A. A. Mattson, supervisor of traffic, Koppers Company, recommended support of the principles of the Reed-Bulwinkle act; and opposition to the St. Lawrence Seaway, to increased capitalization for the Federal Barge Lines, to the "radio-safety" bills (S.238–H.R.378) which would amend section 25 of the Interstate Commerce Act, to creation of a federal transportation authority and to the bill (H.R.2916) relating to control of litigation regarding orders of the Interstate Commerce Commission.

Other speakers included C. M. McKeen, manager, station operations, Baltimore & Ohio; A. C. Roy, traffic manager, Eastern Gas & Fuel Associates, who recommended better marking of shipments as a means of preventing loss or damage to freight; W. E. Callahan, manager, Open Top Section, Car Service Division, Association of American Railroads, and D. O. Moore, manager, freight traffic department, Pittsburgh Chamber of Commerce.

Finds 1944 Order in Interstate Freight Case Has Been Obeyed

The Interstate Commerce Commission has found that the United States Freight Company and Hickok Oil Company have complied with the commission's 1944 order requiring them to divest themselves of all interest in the stock of the Interstate Motor Freight System. The case is No. MC-F-2181, and the divestment plan now approved by the commission halted court proceedings instituted in the United States District Court for the Southern District of New York for enforcement of the commission's order.

When the commission's 1944 report and order were issued (see *Railway Age* of June 24, 1944, page 1220) Interstate had outstanding 4,655 shares of common stock and 2,000 shares of preferred stock, each class of which was owned 45 per cent by U.S. Freight, 21.65 per cent by Hickok, and 33.35 per cent by the late Harry Bylonga and his relatives. The Bylonga holdings of Interstate's common, consisting of 1,552 shares, were purchased in 1945 by Interstate's present chairman, John P. Altwater, who in 1946 purchased 853 additional shares—595 from U.S. Freight and 258 from Hickok.

Those purchases gave Mr. Altwater 51.66 per cent of Interstate's common. Meanwhile, Interstate was buying up its preferred stock, an operation which was completed in February, 1948; and Acme Truck Rentals, Inc., a subsidiary of Interstate, purchased the remaining U.S. Freight and Hickok holdings of Interstate common. It was after an examination of these transactions that the commission concluded that U.S. Freight and Hickok had complied with its 1944 order. It found that entry of another order at this time was unnecessary.

P.R.R.-L.I. Reply to Charges Of Nassau Transit Commission

Both the Pennsylvania and Long Island have formally replied to the recent report of the Nassau County, N. Y., Transit Commission, in which the commission charged the former company with alleged "sharp financial practices" against its Long Island subsidiary. (See *Railway Age* of June 25, page 106.)

The Pennsylvania's answer was an 8-page statement authorized by Walter S. Franklin, P. R. R. president, which made a detailed point-by-point refutation of the many allegations in the commission's report. "All of the matters mentioned," the answer stated in part, "have been completely disclosed and fully justified . . . in various public hearings and proceedings before federal and state commisssions. . . . Very careful and complete reviews of the agreements, accounts and books of the companies have been made by properly qualified governmental representatives. . . . The Nassau County Commission has not . . . unearthed anything new or anything that has been kept secret by the Pennsylvania, but has simply displayed an incorrect understanding of matters which have long been of public record."

The answer quoted from a March 1

The Test of Voluntary Support

The importance of a service may well be measured by the amount of difficulty which would be created by its suspension. It is safe to say that every commercial airline could cease operations at this moment and the life and business of the country would go on with scarcely a riffle. Only a small percentage of our population would be even mildly inconvenienced and the vast majority of our people would not even know it until they read about it in the newspapers or heard it over the radio networks.

It is a well-recognized principle of the free enterprise system that only through the test of the financial ability of each carrier to stand on its own feet and meet its own costs can the respective fields of maximum usefulness and efficient public service of the various types be accurately determined.

When airlines are encouraged by government subsidy to enter fields and perform services not economically justified by the test of voluntary public support in the form of payments for the service used, the resulting diversion of traffic from surface carriers is an injury to the latter and to the nation's economy.

—Beverly, N. J., Banner

report of the New York Public Service Commission to the effect that there is "little basis" for the impression that the Pennsylvania has been "draining off" the resources of the Long Island or "having the better" of joint arrangements with it; and closed with an offer to "cooperate fully" with "any further study which may be regarded as necessary or desirable . . . provided such a study is made by competent, experienced and disinterested investigators at the expense of those desiring it."

The Long Island's own reply was in the form of a letter from its trustees, David E. Smucker and Hunter L. Delatour, to J. Russel Sprague, Nassau County Executive. "Please be assured," the letter said, "of the earnest desire of the trustees so to direct the operations of the property pending reorganization that it may, as you say, '. . . survive to serve us as a self-sustaining private enterprise.' . . . The report of the commission touches upon a number of questions which we have had under consideration and study for some time. The results of our investigations to date are at considerable variance with the findings and conclusions in the commission's report."

As this issue of *Railway Age* went to press the commission was reported to have made a counter-reply to the P.R.R. statement.

Coughlin on Value of Car Service Rules

Failure to observe car service rules on 381 box cars cost almost $315,000 in a test case example cited by E. W. Coughlin, assistant to chairman, Car Service Division, Association of American Railroads, in an address before the Pacific Northwest Advisory Board at Tacoma, Wash., on June 24. During the test week, the 381 cars were, at loading point, an aggregate of 101,840 mi. from owners' rails. At destinations to which they were billed, the cars were 222,988 mi. from owners, or an increment of 121,148 potential empty miles to get them back to the owners.

The speaker pointed out that, "equated to an annual basis, this lack of car selection saddled the 381 cars with 6,299,696 potential empty miles, or, at the commonly accepted figure of 5 cents a mile, an added cost of $314,984.80 to get the cars home."

While stating that "these figures are freighted with infirmities," Mr. Coughlin, nevertheless, expressed the belief that the check indicated that, in many cases, cars misloaded on the same day at the same platform could easily have been reversed in usage, so that the cars could be moved home or close to home.

The speaker pointed out that, in the first quarter of 1947, the percentage of empty to loaded freight car miles was 48.7 per cent. In the first three months of 1949, it rose to 57.1 per cent. Admitting that, "in any period of declining carloadings it is natural there should be some increase in the proportion of empty mileage," Mr. Coughlin observed that "if, by better observance of car service rules, the proportion of empty car haul had been kept at the same level during the first quarter of 1949 as prevailed during the same quarter of 1947, there would have been a saving of about 370 million empty miles, or a money saving of approximately $18.5 million.

"Equated to an annual basis this works out to $74 million. Even if we discount this by a third, to take care of those instances where loading is not available to or toward owners' rails, a $49 million annual saving, through efforts to load cars to or toward owners' rails when this is reasonably practicable, is an impressive figure."

New Agency Takes Over Federal Traffic Management Activities

Centralization of the federal government's activities relating to purchase of transportation services is provided for in the recently enacted Federal Property and Administrative Services Act which President Truman signed on June 30. While the centralization contemplated by the act could bring together all of these so-called traffic management activities of the government, there are provisions which authorize the Secretary of Defense to exempt such activities of the National Military Establishment — "unless the President shall otherwise direct."

The act in general provides for transfer of various "housekeeping," procurement and other activities of the government to a new agency under a set-up somewhat like that recommended in one of the reports of the Hoover Commission. The new agency is the General Services Administration to be headed by an administrator, a position to which President Truman has appointed Jess Larson, who has recently been administrator of the Federal Works Agency and who formerly served as administrator of the War Assets Administration. The President submitted Mr. Larson's nomination to the Senate on July 1, and it was confirmed by that body on July 6.

The functions of both the F.W.A. and the W.A.A. are among those transferred by the act to the new agency. Included in the F.W.A. functions thus shifted are those of the Public Roads Administration, which has become the Bureau of Public Roads in the new G.S.A. set-up. In that connection Congress now has before it President Truman's proposal to carry out a Hoover-Commission recommendation by placing the Public Roads Administration in the Department of Commerce (see *Railway Age* of July 2, page 49). Other agencies consolidated in G.S.A. are the Bureau of Federal Supply and the Office of Contract Settlement, both transferred from the Treasury Department; and the National Archives Establishment.

It was the transfer of the Bureau of Supply from the Treasury Department that brought to the new agency most of the government's traffic-management functions, other than those of the armed forces. The bureau includes the Central Traffic Service Division, of which William E. Hayghe is chief. Meanwhile, the law gives the administrator of G.S.A. authority to prescribe, for all executive agencies, "policies and methods of procurement . . . including related functions such as . . . transportation and traffic management." The administrator is also authorized to represent the executive agencies "in negotiations with carriers" and "in proceedings involving carriers . . . before federal and state regulatory bodies."

Indicating how it will proceed, the new agency's first press release said that the functions taken over "will continue for the present to be carried out by the constituents brought into G.S.A." The press release added: "After study, consolidations and reorganizations will be made in the interest of efficiency and economy. In the field of supply it will be the aim of the General Services Administration to bring about maximum use and minimum purchases of federal property and non-personal services. This will be accomplished by establishing uniform policies and methods of procurement, utilization and related activities."

When the bill (H.R.4754) out of which the act came was on its way through Congress, the Senate version excluded the purchase of transportation services from the government procurement activities which were to be transferred to G.S.A. They were included, however, in the House version and in the final version which was embodied in the conference report reconciling the House and Senate measures.

Debate on the conference report brought out the fact that the Senate was not opposed to centralizing the traffic management activities, but members of its committee on interstate and foreign commerce did not think that the present act went far enough along that line. This position was pointed up in a statement made on the floor of the Senate by that committee's chairman, Senator Johnson, Democrat of Colorado, who is sponsor of a pending bill (S.1095) to create a Federal Traffic Bureau. Mr. Johnson served notice that his committee is not dropping that idea.

"The provisions of the bill we are considering at this time," he said, "do not go far enough. For instance, they eliminate the transportation of the military, and they eliminate from consideration of the proposed traffic bureau the transportation occasioned by adoption of the Marshall Plan.

"We are dealing here with a very important subject. One-tenth of all the cost of transportation in the United States is paid by the federal government. The federal government is the biggest shipper. . . . It is in the interest of economy, as the Hoover report pointed out, that we have a centralized agency to handle this transportation. So while the bill which is being considered, H.R.4754, does move in the right direction, our com-

mittee is not entirely satisfied with all its terms and provisions. Therefore, we wish to announce that we are going ahead with hearings on our bill in order to develop all the facts pertaining to this question . . . and are going to keep a watchful eye on the effectiveness of the traffic bureau which is being set up under H.R.4754. . . . Our committee is not dropping the matter."

Frederic A. Schaff Receives Honorary Degree from Purdue

Frederic A. Schaff, chairman of the board of Combustion Engineering-Superheater, Inc., was honored by Purdue University, his alma mater, with the degree of Doctor of Engineering at the school's 91st commencement on June 19. The presentation was made by Dean A. A. Potter in recognition of Mr. Schaff's "contributions to the design and production of equipment harnessing power for the benefit of mankind."

Rail-Barge Differentials Ordered Effective November 1

The Interstate Commerce Commission has ordered railroads and water carriers on the inland waterways to establish on or before November 1 the through routes with joint rail-water rates reflecting differentials under all-rail rates which the commission found justified in its report of a year ago. The report, noted in the *Railway Age* of July 17, 1948, page 47, decided the long-pending No. 26712 case dealing with the general question of rail-barge differentials.

Following generally a differentials plan sponsored by the government-owned Inland Waterways Corporation, operator of the Federal Barge Lines, the findings of the commission's report set out differentials to be deducted from first-class all-rail rates between selected key points in determining the corresponding reasonable rail-barge, barge-rail, or rail-barge-rail first class rates. Other class and commodity rates (not including rates on commodities in bulk) will be determined on a percentage basis—except that the present barge-rail rates on sugar will not be affected.

When the report was issued, the commission deferred entry of an order and requested the respondent carriers to advise it as to whether they were willing to establish, voluntarily, joint rates "in substantial compliance" with the report's findings. The order requiring establishment of the rates on November 1 was accompanied by a supplemental report which stated that the respondents had advised that they were unwilling to make the adjustment voluntarily. Commissioner Miller, author of the original report, also wrote the supplemental report, which noted that Commissioners Splawn, Patterson, Johnson, and Cross did not participate.

The supplemental report also corrected the original report's findings to include "a few inadvertent ommissions" among the prescribed differentials; and it modified that part of the finding relating to commodity rates which fixes the relationship of such rates as they will apply at New Orleans, La., and Houston, Tex.

New Type Reefer Starts Summer Tests in Canada

The first cross-country summer test of a new type of railway refrigerator car began recently in western Canada when the trial car left Prince Rupert, B. C., on a 4,000-mi. trip to Halifax, N. S., with a load of frozen halibut.

The new car, according to the Canadian Fisheries Department, is designed to transport frozen or fresh fish over long distances from coastal areas to inland points. It was built on the west coast by fisheries board and railway experts, and is equipped with two mechanical refrigeration units, each powered by a small gasoline engine. The car made its first winter run successfully with a load of apples from Kelowna, B. C., to Montreal, Que.

C.N.R.-C.P.R. Say Wage Increase Would Cost $74 Million

Wage increases being demanded by approximately 135,000 non-operating employees, plus a 40-hr. work week, would cost the two principal Canadian railroads $74 million per year, according to a recent joint statement by N. B. Walton, executive vice-president of the Canadian National, and N. R. Crump, vice-president of the Canadian Pacific. Of that total, $22 million would be assignable to the wage increases of from 7 to 10 cents per hour which the employees would have become effective July 16 or 17; and $52 million to the 40-hr. week which the employees would have the railroads put into effect on September 1.

As reported in last week's *Railway Age*, page 130, the combined demands represent an over-all increase of about 28 per cent above the present average Canadian non-operating railway wage of $1.09 per hour.

T.A.A. Appoints Baker as Consultant; Urges Tax Repeal

The Transportation Association of America has appointed Dr. George Pierce Baker, professor of transportation at the Harvard University Graduate School of Business Administration, Boston, Mass., as consultant to the association's cooperative project on national transportation policy.

The project is an attempt to resolve the basic issues in the national transportation problem through study, expression of opinion and exchange of conflicting ideas between shippers, investors and the various forms of carriers; separate panels have been or will be set up for each of those groups. Dr. Baker will attend all panel meetings for consultation as to the historical and economic background of the issues under consideration and will act as moderator at joint panel meetings.

Directors of the T.A.A. have adopted a resolution urging immediate repeal by Congress of the war-time excise taxes of 15 per cent on common carrier passenger fares and 3 per cent on common carrier freight shipments. These taxes, the resolution stated, "create a severe burden on the users of transportation as well as on the transport agencies; their removal would provide a strong stimulus to business."

The association has elected as additional members of its board of directors Edward P. Farley, chairman of the board, American-Hawaiian Steamship Company, New York; Herbert J. Lorber, president, Rollins, Burdick, Hunter Company, Chicago, and Victor Emanuel, chairman and president, Avco Manufacturing Corporation, New York.

Roller-Bearing-Equipped Journal Causes Derailment

Reporting on its investigation of the April 28 derailment of the Pennsylvania's westbound "Broadway Limited" near Fort Wayne, Ind., the Interstate Commerce Commission has found that the accident was caused by a broken journal, the journal involved having been equipped with roller bearings. The report by Commissioner Patterson included a summary of findings made by a P.R.R. engineer of tests who concluded that "the immediate cause of the failure was overheating as a result of the inner race of the inside roller assembly becoming free and rotating on the journal."

Also, the commission pointed out that the accident covered by the present report was the third 1949 derailment "in which roller bearings have failed" (see *Railway Age* of April 23, page 51). "In these cases," it added, "there was no means to indicate a defective or overheated condition of such bearings to members of the crew." At the same time it noted that, while the P.R.R. "has not yet adopted any such device for general use," it has been experimenting since October, 1943, "with several devices intended to give warning when journals become overheated."

The "Broadway," Train No. 29, was traveling 70 m.p.h., 5 m.p.h. below its speed limit, at the time of the accident which resulted in the injury of 21 passengers, 18 dining-car employees, 3 Pullman employees and 1 train-service employee. The derailment occurred at 6:23 a.m. on April 28, on a tangent stretch of track 2.4 mi. east of Fort Wayne on the double-track main line of the P.R.R.'s Fort Wayne Division. The train had just passed over a trailing-point switch which serves a cross-over track. It consisted of two Diesel-electric locomotives, coupled back-to-back in multiple-unit control, and 15 cars in this order: 1 baggage car, six sleeping cars, 1 kitchen-dormitory car

and 1 dining car coupled together as a unit, and 6 sleeping cars. The first (baggage) car was of "conventional" carbon-steel construction, while the other 14 were of lightweight high-tensile steel construction; and all except the first car and the rear of the last car were equipped with tightlock couplers.

The journal which broke was the left front journal of the rear truck of the kitchen-dormitory car, i.e., the eighth car in the train. That truck and the tenth to fifteenth cars, inclusive, were derailed, but the ninth car was not. A separation between the eleventh and twelfth cars occurred, according to the report, "when metallic steam-heat connectors struck the rotary-operated coupler-release mechanism during the derailment." The locomotive units and the first 11 cars remained coupled and stopped with the front end of the first unit 2,422 ft. west of the point of derailment. The twelfth to fifteenth cars also remained coupled, and stopped between the track on which they had been running and a parallel secondary track, with the front end of the twelfth car 805 ft. short of the rear end of the eleventh car and 529 ft. west of the point of derailment. The eighth to the fifteenth cars, inclusive, "sustained considerable damage below the floorline," the commission reported.

The dormitory-kitchen car on which the journal broke was built in January of this year and placed in service on the 26th of that month. It is 85 ft. long, its light weight is 156,680 lb., and it is provided with two 4-wheel trucks. The report described the truck parts and fittings which include equalizers of the bottom type extending between the journal boxes on each side of each truck. The equalizers are curved upward at each end and are seated upon the tops of the journal boxes.

The journal involved was equipped with a double roller-type bearing, consisting of cylindrical inner and outer races. The inner races were impressed upon the axle journal, and were of double-cone shape to control lateral movement. The outer races were pressed into the journal box and were arranged not to revolve. The journal-box housing was sealed by a gasket and a cover plate against the leakage of oil, and also against the entrance of water or other foreign matter. The journal-bearing assembly was lubricated by oil which circulated from the bottom of the journal box.

The commission's investigation disclosed that the breaking of the journal caused the front end of the truck's left equalizer bar to drop and come into contact with the track structure. "The equalizer bar and the left front pedestal tie-bar were considerably marked," the report said, and it proceeded to describe several marks found on the track.

"Examination of the failed journal," the report went on, "disclosed that it had been overheated, then had become broken. The break in the journal occurred within the inner race of the inside set of the double-type roller bearing at a point about 1½ in. outward from the journal fillet. The portion of the journal remaining attached to the axle was ground into an oval shape stub, and it extended about 3½ in. outward from the hub of the left wheel. The broken-off portion of the journal remained in the journal-box housing and was fused to the inner races. Both parts of the journal and all parts of the bearing assembly were badly discolored by overheating. The inner assembly of the bearing was practically destroyed. The separator cages were badly broken, and the roller elements were deformed. Except for one broken separator prong, the outer assembly was intact. The rear enclosure of the journal housing was broken as a result of the breaking of the journal. All of the oil in this bearing had been burned. However, a sufficient amount of oil was found in all the other journal-bearing assemblies of this car."

Later on, where it reported the P.R.R. engineer's conclusion that the overheating resulted when the inner race of the inside roller bearing became free and

Selected Income and Balance-Sheet Items of Class I Steam Railways

Compiled from 128 reports (Form 1BS) representing 132 steam railways.
(SWITCHING AND TERMINAL COMPANIES NOT INCLUDED)

Income Items	United States For month of March 1949	1948	For the three months of 1949	1948
1. Net railway operating income	$65,417,192	$60,724,331	$128,415,886	$142,646,578
2. Other income	17,365,365	17,602,269	50,461,193	57,027,735
3. Total income	82,782,557	78,326,600	178,877,079	199,674,313
4. Miscellaneous deductions from income	2,848,242	3,915,897	9,838,482	11,202,887
5. Income available for fixed charges	79,934,315	74,410,703	169,038,597	188,471,426
6. Fixed charges:				
6–01. Rent for leased roads and equipment	10,525,183	11,133,636	27,370,926	31,193,564
6–02. Interest deductions[1]	24,610,445	24,220,565	73,740,761	72,799,038
6–03. Other deductions	204,332	145,570	549,386	425,190
6–04. Total fixed charges	35,339,960	35,499,771	101,661,073	104,417,792
7. Income after fixed charges	44,594,355	38,910,932	67 377,524	84,053,634
8. Other deductions	3,100,845	3,114,776	9,314,960	9,505,388
9. Net income	41,493,510	35,796,156	58,062,564	74,548,246
10. Depreciation (Way and structures and Equipment)	33,110,997	30,471,452	98,547,219	90,762,540
11. Amortization of defense projects	1,357,573	1,369,805	4,106,267	4,423,679
12. Federal income taxes	24,356,270	26,104,975	61,763,053	71,337,602
13. Dividend appropriations:				
13–01. On common stock	23,214,687	9,725,988	46,372,242	39,388,250
13–02. On preferred stock	7,225,952	11,372,449	22,537,604	17,966,393
Ratio of income to fixed charges (Item 5 ÷6—04)	2.26	2.10	1.66	1.80

Selected Expenditure and Asset Items	United States Balance at the end of March 1949	1948
17. Expenditures (gross) for additions and betterments—Road	$70,874,772	$64,260,475
18. Expenditures (gross) for additions and betterments—Equipment	271,686,030	206,538,762
19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	519,509,055	565,297,973
20. Other unadjusted debits	133,522,580	162,775,147
21. Cash	771 307,190	809,210,615
22. Temporary cash investments	918,246,548	936,763,514
23. Special deposits	122,045,673	128,495,214
24. Loans and bills receivable	744,398	12,661,342
25. Traffic and car-service balances—Dr.	54,160,925	64,098,094
26. Net balance receivable from agents and conductors	113,561,041	123,221,740
27. Miscellaneous accounts receivable	313,832,436	339,432,771
28. Materials and supplies	893,194,812	794,564,297
29. Interest and dividends receivable	13,406,073	17,679,873
30. Accrued accounts receivable	141,538,358	163,616,353
31. Other current assets	39,456,851	39,584,641
32. Total current assets (items 21 to 31)	3,381,494,305	3,429,328,454
Selected Liability Items	**1949**	**1948**
40. Fund debt maturing within 6 months[2]	$156,885,108	$152,716,589
41. Loans and bills payable[3]	3,000,000	3,795,000
42. Traffic and car-service balances—Cr.	73,748,703	94,803,998
43. Audited accounts and wages payable	475,170,328	497,804,697
44. Miscellaneous accounts payable	212,525,572	227,702,676
45. Interest matured unpaid	65,927,305	73,294,204
46. Dividends matured unpaid	21,851,197	18,551,021
47. Unmatured interest accrued	71,532,917	66,861,777
48. Unmatured dividends declared	26,757,502	29,210,308
49. Accrued accounts payable	234,044,930	187,422,818
50. Taxes accrued	701,672,673	639,152,982
51. Other current liabilities	76,119,280	97,558,475
52. Total current liabilities (items 41 to 51)	1,962,350,407	1,936,157,956
53. Analysis of taxes accrued:		
53–01. U. S. Government taxes	572,757,061	517,815,360
53–02. Other than U. S. Government taxes	128,915,612	121,337,612
54. Other unadjusted credits	275,266,492	335,671,187

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.
[3] Includes obligations which mature not more than one year after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.
Subject to revision.

DIAMOND ANNIVERSARY FOR EADS BRIDGE—The Eads bridge, the first bridge to be built across the Mississippi river at St. Louis, Mo., became 75 years old on July 4. Named in honor of its designer, Captain James Buchanan Eads, the bridge represents one of the most remarkable engineering feats of its time. It was the first bridge in which steel was used extensively and the first to have hollow chord members. In the construction of the piers and abutments, pneumatic caissons were used for the first time. Architecturally, it is still rated one of the most beautiful bridges of the world. The structure consists of three steel arch spans, the center one 520 ft. long and the other two each 502 ft. long. It supports a two-level deck, the upper carrying vehicular traffic and the lower railroad traffic. At present the bridge is owned by the Terminal Railroad Association of St. Louis, and is used by 15 member railroads and 11 non-member transportation companies. Daily rail traffic consists of about 2,000 freight and 24 passenger cars. In the course of a year about $4 billion worth of goods flow through the St. Louis Eads Bridge gateway

rotated on the journal, the commission proceeded to observe that "apparently the inner race was loosened as a result of failure of one of the separator cages, which permitted roller elements to lock the bearing." Meanwhile, the report had referred to P.R.R. records which indicated that the inner race of the failed bearing was pressed on the journal under a pressure of 20 tons, "which conformed to the requirements of the range between 10 and 20 tons."

Tests after the accident indicated that the eccentricity of the right wheel on the same axle was 0.005 in.; and "although proper tests of the left wheel could not be made," its eccentricity was computed to be 0.011 in. Both of these wheels were manufactured in 1947, and had been applied to the car on March 9, 1949. After the accident their flange height and thickness "conformed to good contour," and the tread wear was "negligible," the report also said. The axle involved was manufactured in 1948, and "normalized and tempered" at the P.R.R.'s Juniata shop on March 23, 1948. The journals were 6 in. by 11 in.

At the time of the accident the bearing assembly had an accumulation of 99,147 mi., and had last been supplied with oil on April 16. The journal-bearing assembly on the right journal of the axle was in good condition. A sample inspection of 20 sets of double-type roller bearings which had been in service from 6 to 12 months disclosed that all were in good condition. The mileage of these journal bearings ranged between 73,232 and 132,650 mi.

The car had been inspected and serviced at Sunnyside Yard, N. Y., before being assembled into the train during the afternoon of April 27. Also the cars were inspected at "several points" after the train left New York on the 27th, the last such inspection (about 2 hrs. prior to the time of the accident) having been at Crestline, Ohio, 129.3 mi. east of the point of derailment. That inspection, the report said, "consisted of an air-brake test and general visual inspection of equipment"; but "at this time there was no indication of any defective condition of the journal involved." In that connection the report went on to observe that "because of the construction of roller-bearing assemblies proper visual inspection can be made only when the housings are removed." Also, it noted that members of the train crew had maintained the usual lookout, observing their moving train and watching for signals from crossing watchmen, operators, etc. As to that, the commission said "considering the construction of modern streamline cars, with skirting below the floor line, it is difficult to detect defective conditions of journals while a train is moving at high speed."

New Haven Gets Interim Boost In New York Commuter Fares

The Public Service Commission of New York has granted the New York, New Haven & Hartford an interim increase, until next December 21, in commutation fares for all stations between Grand Central Terminal, New York, and the Connecticut line (Port Chester, N. Y.). The increase will amount to 18 per cent for the standard 60-trip monthly ticket and 7.5 per cent for the 46-trip student ticket; it also includes authority for issuance of a new 46-trip ticket for general commuting, good on any five consecutive days, including Sundays and holidays, at a cost of 6 per cent above the present 60-trip ticket.

The increase is expected to produce additional gross revenue of approximately $258,000 on an annual basis. It was granted as an outgrowth of a petition for a 25 per cent increase originally filed in 1947, at which time the Interstate Commerce Commission authorized the New Haven to increase its interstate New York-Connecticut commutation fares.

Class I Roads Spent $24,357,-789 for Advertising Last Year

Class I railroads spent $24,357,789 for advertising in 1948, according to a report sent recently to railroad public relations representatives by Robert S. Henry, vice-president of the Association of American Railroads in charge of the Public Relations Department. Nearly half of the total, $12,090,280, was spent on "calendars and other advertising media," a classification which includes timetables.

The second largest expenditure, $5,-803,122, was for newspaper advertising, while $4,711,445 was spent on magazine advertising and $745,347 on radio advertising. The Union Pacific's 1948 expenditures for advertising were larger than those of any other road, its outlay having been $2,693,398. Next in turn came the Atchison, Topeka & Santa Fe, $2,-550,012; Pennsylvania, $2,460,253; New York Central, $1,441,649; and Chesapeake & Ohio, $1,375,787. No other Class I road spent as much as a million dollars for advertising last year. The 1948 gross revenues of Class I roads totaled $9,671,-595,218.

Tell Passengers Cause of Train Delay, Says Milwaukee

The Chicago, Milwaukee, St. Paul, & Pacific is employing a small, cartoon-illustrated pamphlet to emphasize to its trainmen and station agents the importance of telling passengers, without delay, the reasons for train delays and the probable length thereof.

Entitled "We Haven't Any Secrets," the leaflet states: "Milwaukee Road employees know that our customers have a right to expect us to run our trains according to time table schedules, and it is our aim to do so. But—when some-

thing happens on the railroad to delay a train, our patrons should be told about it. Passengers are as anxious to arrive at their destinations on time as we are to operate our trains on time. When they can't find out what is causing a delay they become impatient. . . . People are reasonable about such things . . . when they know the facts," the leaflet concludes.

Harriman Award Committee Names 1948 Safety Winners

The Committee of Award of the E. H. Harriman Memorial Medals has selected the following companies to be the recipients of the medals for the best 1948 safety records among domestic Class I railroads: Group A (roads operating more than 10,000,000 locomotive-miles annually), Chicago, Burlington & Quincy; Group B (roads operating less than 10,000,000 but more than 1,000,000 locomotive-miles), Duluth, Missabe & Iron Range; and Group C (roads operating less than 1,000,000 locomotive-miles), Missouri-Illinois.

The committee has also voted to award certificates of commendation for outstanding safety performances to the following: Eastern district—(Group A), Delaware, Lackawanna & Western, (Group B), Detroit, Toledo & Ironton, and (Group C), Cambria & Indiana; Southern district—(Group A), Southern, (Group B), Charleston & Western Carolina, and (Group C), Mississippi Central; and Western district—(Group B), St. Louis Southwestern, and (Group C), Utah. The award of a certificate to a Group A road in the Western district will be the subject of further investigation by R. V. Fletcher and W. J. Patterson, of the award committee.

The 1948 awards, which will be presented to the winning railroads at a dinner to be held in September, were made on the basis of individual railroad companies, as distinguished from railroad systems.

Forecast Puts Loadings 7.4 Per Cent Below 1948's 3rd Quarter

Freight carloadings in the third quarter of 1949 are expected to be 7.4 per cent below those in the same period of 1948, according to estimates of the 13 Shippers Advisory Boards.

On the basis of those estimates, loadings of the 32 principal commodity groups will be 8,179,941 cars in the third quarter of 1949, compared with 8,832,648 actual carloadings for the same commodities in the corresponding period of 1948. All boards except one—the Great Lakes—estimate a decrease in loadings.

The tabulation below shows actual loadings for each district in the third quarter of 1948, the estimated loadings for the third quarter of 1949, and the percentage of decrease.

The 13 boards expect a decrease in the loading of 22 of the commodities listed and an increase in nine. Livestock loadings are expected to be about the same. Among those showing the greatest decrease are: Poultry and dairy products, 20.8 per cent; citrus fruits, 18.5 per cent; metals, other than iron and steel, 17.4 per cent; potatoes, 16.1 per cent; coal and coke, 14.3 per cent; lumber and forest products, 12.2 per cent; machinery and boilers, 11.9 per cent; sugar, syrup and molasses, 11.2 per cent; iron and steel, 10.5 per cent; chemicals and explosives, 10.5 per cent; paper, paperboard and prepared roofing, 10.2 per cent; cottonseed, soybean-vegetable cake excluding oil, 9.6 per cent; gravel, sand and stone, 8.9 per cent; petroleum and petroleum products, 8.1 per cent; fresh vegetables, other than potatoes, 7 per cent; lime and plaster, 6.9 per cent, and brick and clay products, 6.3 per cent.

Shippers Advisory Boards	Actual Loadings Third Quarter 1948	Estimated Loadings Third Quarter 1949	Per Cent Decrease
New England	123,317	104,791	15.0
Atlantic States	944,426	868,863	8.0
Allegheny	1,167,384	985,033	15.6
Ohio Valley	1,078,257	979,648	9.1
Southeast	944,463	846,884	10.3
Great Lakes	675,836	682,141	0.9 inc.
Central Western	307,853	296,466	3.7
Mid-West	998,126	899,064	9.9
Northwest	830,932	829,273	0.2
Trans-Missouri-Kansas	475,876	469,484	1.3
Southwest	596,439	556,479	6.7
Pacific Coast	390,270	384,067	1.6
Pacific Northwest	299,469	277,748	7.3
TOTAL	8,832,648	8,179,941	7.4

Commodities for which increases are estimated and the amount of increase include: Vehicle parts, 18.8 per cent; fresh fruits other than citrus, 11.3 per cent; grain, 7.2 per cent; cotton, 6.7 per cent; cement, 3.6 per cent, and automobiles and trucks, 3.4 per cent.

University Studies M. U. Diesel Sets

Diesel motor trains with multiple-unit electric controls, as used in the Netherlands since 1934, may provide a basis for reducing costs and increasing revenues of passenger trains in the United States. This is one of the conclusions reached in a research study of Diesel motor trains throughout the world, conducted by the Department of Transportation at Northwestern University, Chicago.

Stanley Berge, associate professor of transportation, who has been in charge of this research, announced recently that a complete documented report of the project will be released later this summer. He stated that the basic Dutch design, consisting of a three-car articulated Diesel motor train, with two engines mounted in the center car, can be run for approximately half the cost of an equivalent steam train. This makes it possible, he said, to double suburban or main-line train service without exceeding present steam train costs. The Diesel motor train, which carries passengers or other payload in the power car, can be run for considerably less cost than a comparable train with a Diesel locomotive, according to the study.

The study notes: "Following the extensive application of Diesel motor trains by the Netherlands railways, an observed increase in traffic took place. The resultant faster, more frequent service succeeded in drawing traffic not only from the bus lines but also from private automobiles.

"In 1938 a cost comparison was made between one of the three-car Diesel-electric motor trains and a steam-driven train consisting of a locomotive and four coaches. The cost of operating the motor train was .61 guilders per mile as against 1.30 guilders per mile for the steam train, a reduction of about 54 per cent.

"In November, 1948, the reported operating cost per train-mile for a Diesel-electric motor train, consisting of two three-car sets having a capacity of 336 seats, was 2.90 guilders ($1.10). For a steam train consisting of a locomotive and five coaches with a capacity of 343 seats, the figure was 3.15 guilders ($1.19) per mile. In these figures, the costs for repair, maintenance, interest and depreciation are included."

Inducement of Railroaders Found Beyond Scope of Boycott

The National Labor Relations Board has ruled that inducing railroad employees to withhold their services does not come within the scope of the secondary-boycott ban of the Labor Management Relations Act. It was the first ruling by the board on this question.

The board based its decision upon a finding that railway employees are not "employees" as defined in the act. The act's definition of an "employee" specifically excludes "any individual employed by an employer subject to the Railway Labor Act," and the definition of an "employer" excludes "any person subject to the Railway Labor Act."

The Board's decision overruled a contention of the N.L.R.B. general counsel that the secondary-boycott ban applies to a union's secondary action involving individuals or employers not covered by the act's definitions. It also reversed a ruling by the trial examiner who had heard the case and upheld the general counsel's view.

In accordance with its ruling, the board dismissed charges of secondary boycott against Local 201 of the International Brotherhood of Teamsters, American Federation of Labor. The charges were brought by six rice mills in the vicinity of Crowley, La., after teamster pickets prevented train crews of the Southern Pacific and Missouri Pacific from switching railway cars in and out of the mill during a 1947 strike. The trial examiner found that the railway employees were induced to stop their switching operations for a period of about seven days,

by threats and by groups of 15 to 30 pickets congregating on the tracks.

Of its finding that railway employees do not come within the scope of the secondary boycott ban, the board said: "Our conclusion in this respect is buttressed by the separate treatment that Congress has historically accorded railroads, their employees, and organizations of their employees. In our opinion, a sudden contrary intent on the part of the Eightieth Congress should not be inferred in the absence of a clear expression in the statute that such was the Congressional purpose. We find no suggestion of such a clear expression here. Indeed, the fact that the 1947 amendments changed the definition of employee by excluding persons 'employed by an employer subject to the Railway Labor Act,' whereas no such exclusion was contained in the Wagner Act before amendment is, if anything, an expression of an opposite intention.'

Picketing on the railroad tracks, which began October 15, 1947, was halted October 22, 1947, after Judge Paul Debaillon of Louisiana State District Court issued a preliminary injunction enjoining the Teamsters' Union from "interfering with" the M. P. "in the conduct of its business as a common carrier." The N.L.R.B. decision was issued on June 22.

O.D.T. Out of Business

The Office of Defense Transportation went out of business on schedule June 30, after having functioned for 7½ years. It was created December 18, 1941, by the late President Roosevelt, who gave it the job of assuring "maximum utilization of the domestic transportation facilities of the nation for the successful prosecution of the war."

Its second and last director—Colonel J. Monroe Johnson, who is also a member of the Interstate Commerce Commission—made no formal statement as the agency went out of existence. In an informal talk with reporters, the colonel expressed his satisfaction with what O.D.T. had accomplished and paid his respects to the "fine people in all forms of transportation" with whom he had worked. Colonel Johnson had been director of the agency since April 4, 1944, when he succeeded to the position after the death of Joseph B. Eastman, the first director.

During the past three months, O.D.T. has been pretty much in the liquidation stage. On April 16, it suspended its last three orders which were General Order ODT 18A, the minimum-loading order for carload freight; General Order ODT 1, the minimum-loading order for l.c.l.; and General Order ODT 16C that had maintained controls on carload shipments moving to ports for export. One day earlier, on April 15, it withdrew from further participation in the voluntary steel-allocation program for freight cars which was being administered by the Department of Commerce's Office of Industry Cooperation, Colonel Johnson explaining that the allocations were not being taken up. Five employees were on O.D.T.'s payroll at the end; at one time it had 4,917 employees and its peak annual appropriation totaled about $16,000,000.

O.D.T.'s end was made official this week when President Truman issued an executive order terminating the agency and assigning the job of completing its liquidation to the I.C.C. The order, issued July 6, was made effective as of July 1.

Freight Car Loadings

Car loadings for the week ended July 2 were not available when this issue of *Railway Age* went to press.

Loadings of revenue freight for the week ended June 25 totaled 802,941 cars, and the summary for that week as compiled by the Car Service Division, Association of American Railroads, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, June 25

District	1949	1948	1947
Eastern	138,143	158,822	158,069
Allegheny	164,134	183,552	185,023
Pocahontas	64,571	69,738	46,299
Southern	114,129	136,126	123,555
Northwestern	132,579	135,469	135,913
Central Western	128,760	137,945	131,186
Southwestern	60,625	66,716	66,096
Total Western Districts	321,964	340,130	333,195
Total All Roads	802,941	888,368	846,141
Commodities:			
Grain and grain products	64,893	52,491	55,258
Livestock	6,828	8,928	11,441
Coal	171,510	191,963	129,446
Coke	12,158	14,325	12,526
Forest products	40,092	49,642	46,644
Ore	80,665	80,626	82,328
Merchandise l.c.l.	91,222	104,978	116,096
Miscellaneous	335,573	385,415	392,402
June 25	802,941	888,368	846,141
June 18	649,351	906,631	901,296
June 11	808,156	906,663	895,292
June 4	698,824	821,206	900,747
May 28	784,824	904,757	830,205
Cumulative total 25 weeks	18,091,798	20,070,232	20,982,169

In Canada.—Carloadings for the week ended June 25 totaled 75,352 cars, compared with 74,493 cars for the previous week, and 78,901 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
June 25, 1949	75,352	29,403
June 26, 1948	78,901	34,709
Cumulative totals for Canada:		
June 25, 1949	1,813,651	789,226
June 26, 1948	1,863,241	884,858

Railroads Withdraw Protest Against Radio Allocations

Railroads have abandoned, for the present at least, their efforts to have the Federal Communications Commission reconsider its recent order which took away from the Railroad Radio Service 19 to 21 of the 60 frequencies originally allocated to it. After the F.C.C. issued the order (see *Railway Age* of May 7, page 59), the Association of American Railroads and six individual roads filed a joint petition, with a detailed supporting argument, for vacation of the order or for reopening of the case for hearing and reconsideration.

The same petitioners on June 27 filed a request for leave to withdraw the petition, and the F.C.C. granted the request on June 29 when it dismissed the petition "without prejudice." Dismissal on that basis was in accordance with the railroads' request which also said that the petitioners did not wish the withdrawal to be understood "either as admitting the adequacy of the frequency allocation," or as waiving petitioners' "right, at any appropriate time in the future, to seek the allocation to the Railroad Radio Service of such additional frequencies as the needs of such service and the public interest may require."

The A.A.R. was a petitioner "in behalf of its members," and the six individual-railroad petitioners were the Atchison, Topeka & Santa Fe; Baltimore & Ohio; Erie; Gulf, Mobile & Ohio; Missouri-Kansas-Texas, and Seaboard Air Line.

T. E. Bickers Becomes Secretary of N.M.B.

Thomas E. Bickers, who became secretary of the National Mediation Board on July 1, succeeding Robert F. Cole, has been engaged in labor relations work for more than 30 years. As reported in the *Railway Age* of June 25, page 128, Mr. Cole, who relinquished the secretaryship at his own request in anticipation of his early retirement, has temporarily joined the board's staff of mediators.

Mr. Bickers was born in Richmond, Va., and was in railroad service prior to

Thomas E. Bickers

1918 with the Chesapeake & Ohio in various capacities, including labor relations work. From 1918 until 1920, he served with the Board of Wages and Working Conditions of the United States Railroad Administration; and, upon termination of federal control of the railroads, became an examiner on the staff of the former United States Railroad Labor Board, which was created by the Transportation Act of 1920. When that board was supplanted in 1926 by the former

U. S. Board of Mediation, Mr. Bickers joined the new agency's staff as a mediator.

From 1930 until 1938, he was again in railroad service as a personnel officer for the former Pere Marquette and the New York, Chicago & St. Louis. Mr. Bickers then returned to government service as a mediator on the staff of N.M.B., which had meanwhile succeeded to the duties of the former U.S. Board of Mediation in 1934. He continued as an N.M.B. mediator until his appointment as secretary. Among other assignments, he served on the committee which promulgated the Standard Occupational Classification of Railroad Employees and Reporting Forms.

April Accident Statistics

The Interstate Commerce Commission has made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for April and this year's first four months. The compilation, which is subject to revision, follows:

Item	Month of April 1949	Month of April 1948	4 months ended with April 1949	4 months ended with April 1948
Number of train accidents*	663	788	3,161	4,270
Number of accidents resulting in casualties	37	33	166	241
Number of casualties in train, train-service and non-train accidents:				
Trespassers:				
Killed	102	99	315	374
Injured	74	91	281	300
Passengers on trains:				
(a) In train accidents*				
Killed	—	3	—	17
Injured	28	158	164	536
(b) In train-service accidents				
Killed	4	3	9	9
Injured	148	227	649	867
Travelers not on trains:				
Killed	—	—	—	2
Injured	63	96	259	377
Employees on duty:				
Killed	34	38	143	208
Injured	1,820	2,243	7,913	10,840
All other nontrespassers:**				
Killed	124	126	540	578
Injured	407	428	2,120	2,359
Total—All classes of persons:				
Killed	264	269	1,007	1,188
Injured	2,540	3,243	11,386	15,279

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former caused damage of more than $250 to railway property in 1948. Beginning January 1, 1949, this minimum was raised to $275. Only a minor part of the total accidents result in casualties to persons, as noted above.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Persons:				
Killed	112	108	501	527
Injured	278	293	1,463	1,519

Chicago Convention Bureau Hits Transportation Tax

Chicago, as the nation's biggest transportation center, is paying the heaviest penalty for continuation of the 15 per cent federal tax on public transportation, the board of directors of the Chicago Convention Bureau charged recently. In communications sent by I. S. Anoff, bureau president, to the Illinois congressional delegation and members of the Senate finance committee and the House ways and means committee, the bureau stated that "as long as this outmoded and unfair tax continues in effect there can be little buoyancy of spirit in an America previously noted throughout its history as a nation free to come and go as it pleased."

Agreeing that there might have been justification for the tax, when it was originally enacted, as a necessary and feasible method of controlling public travel during the war, Anoff declared that such need has long since passed and that continuance of the tax creates an unwarranted hardship and injustice. "Effects of this tax have been particularly severe in Chicago where transportation is a key source of income," he averred. "Not only has it resulted in growing unemployment in the transportation industry, but it has had parallel discouraging effect in all branches of business dependent upon travel."

Citing the sharp decline of domestic travel over the past 12 months, Anoff said "this depressing condition, which has not only curtailed regular vacation and tourist business as well as attendance at conventions important to the public welfare, also is evidenced in the marked tendency of commercial travelers and businessmen to hold their trips down to a minimum. Obviously such a negative trend can only lead to a further reduction in the purchasing power of goods and services offered by the travel industry and adversely affect our entire national economy."

Lists 1948 Commodity Statistics According to Geographical Area

The Interstate Commerce Commission's Bureau of Transport Economics and Statistics has made public its statement No. Q-550 for the year 1948, showing for Class I railroads the tons of revenue freight originated and terminated in carloads by classes of commodities and by geographical areas. The commodity-group figures total 1,488,612,427 tons originated and 1,359,174,639 tons terminated.

The "geographical areas" breakdown is by states, except the six New England states which are grouped together. The largest originator and terminator is Pennsylvania, where 239,699,843 tons originated and 177,471,476 tons terminated in 1948. Illinois, as in 1947, was the leader in the forwarder traffic, with 1,168,846 tons originated and 811,251 tons terminated.

Illinois also led as the largest 1948 originator of agricultural products, with 13,742,795 tons, and as the biggest originator of animals and products, with 2,094,079 tons. Texas took the lead as terminator of agricultural products, with 14,080,594 tons, while New York, with 2,066,103 tons, was the foremost terminator of animals and products.

Pennsylvania was the leading originator and terminator of mine products, with 180,512,556 tons and 122,440,726 tons, respectively, and also led the manufacturers and miscellaneous group, with 57,362,622 tons originated and 44,465,111 tons terminated. Oregon, with 12,182,483 tons originated, and Washington, with 7,895,928 tons terminated, headed the forest products category.

Craemer Cites Harmful Effects of Excise Taxes

Justus F. Craemer, of the California Public Utilities Commission, and E. W. Coughlin, assistant to chairman, Car Service Division, Association of American Railroads, were the featured speakers at the 79th regular meeting of the Pacific Coast Transportation Advisory Board at Los Angeles, Cal.

Mr. Craemer, speaking at a luncheon sponsored by the Los Angeles Transportation Club, emphasized the harmful effects on shippers and carriers, particularly in the West, of war-time federal excise taxes on common carrier transportation. Mr. Coughlin, at one of the business sessions, stressed three basic ways in which efficiency of freight car handling may be improved — heaviest practicable loading, fastest possible turn-around and loading toward owner's rails.

The board adopted a resolution favoring retention of car service, inspection and safety functions in the Interstate Commerce Commission, as at present, and opposing their transfer to the Department of Commerce.

J. W. Witherspoon, assistant general traffic manager, United States Rubber Company, Los Angeles, and vice-general chairman, presided, in the absence of General Chairman Irving F. Lyons, traffic director, California Packing Corporation, San Francisco. Attendance totaled 409.

The board's next meeting will be at the Palace Hotel, San Francisco, September 14-15.

Additional General News appears on pages 157-167.

SUPPLY TRADE

The **Automatic Control Company,** St. Paul, Minn., has appointed **J. F. Wulfetange, Jr.,** 317 State street, Syracuse 2, N. Y., as the company's eastern New York representative.

The **Greenfield Tap & Die Corp.** has announced that removal of its AMPCO twist drill manufacturing facilities from Jackson, Mich., to Greenfield, Mass., is now underway and is expected to be completed by September 1. The corporate structure of the Ampco Twist Drill Corporation has been dissolved and all assets transferred to Greenfield, where a

complete drill-making establishment is being set up. **Frank J. Sikorovsky,** president and general manager of Ampco Twist Drill, has been appointed a vice-president of Greenfield Tap & Die. The AMPCO sales organization will continue as an independent unit, also with headquarters in Greenfield.

J. L. McDermott has been appointed manager of the Ryertex division of **Joseph T. Ryerson & Son,** to succeed **Kenneth T. MacGill,** who has retired after 32 years of service. Mr. McDermott had been western sales manager of the division since January 1, 1948. He has been with the company since 1923.

John J. Summersby has been elected vice-president in charge of sales for the **Worthington Pump & Machinery Corp. Thomas J. Kehane** has been made assistant vice-president and general sales manager.

The following personnel changes have been made in the pigment division of the **Reynolds Metals Company: A. P. Fleming,** formerly at the Philadelphia, Pa., office, transferred to New York as sales manager, a newly created position; **F. W. Allsmiller,** assistant sales manager, transferred from New York to Louisville, Ky.; **J. W. Macauley,** of the New York office, assigned to the Pittsburgh, Pa., and Philadelphia territories, with headquarters in Philadelphia; **E. F. Reilly,** transferred from San Francisco, Cal., to Kansas City and assigned to the central states division; **A. H. Kleinfeldt,** made assistant to **Gordon M. Babcock,** technical director; **L. H. Besten,** placed in charge of sales service in the New York office, and **L. V. Sheain,** transferred from the pigment division to the newly formed chemical division.

P. B. Mayfield has been appointed technical consultant on wood preservation for the Barrett division of the **Allied Chemical & Dye Corp.** Mr. Mayfield will be located at the company headquarters, 40 Rector street, New York 6.

E. H. Remde, formerly works manager of the industrial truck division of the **Baker-Raulang Company,** has been appointed to the newly created post of advisor to the president on engineering and manufacturing. **H. A. Schultz,** formerly superintendent of the division, has been appointed manufacturing engineer, and **I. L. Young** has been appointed general superintendent. **John A. Matousek** has been named manager of manufacturing, to be in charge of all manufacturing, purchasing and engineering functions of the division.

H. D. Wright has been appointed director of sales, western region, for the **Industrial Brownhoist Corporation,** with headquarters in San Francisco, Cal.

Robert J. Mullahy, district sales manager in charge of the Detroit, Mich., office of the **Youngstown Sheet & Tube Co.,** has retired and has been succeeded by **C. Hix Jones,** formerly assistant district manager.

T. M. Robie, manager of the Diesel division, **Fairbanks, Morse & Co.,** with headquarters at Chicago, has been appointed director of quality control at the firm's Beloit (Wis.) works. He has been succeeded by **J. W. Wright,** formerly manager of the Diesel engine sales department at Kansas City, Mo. Mr. Robie, who

T. M. Robie

graduated in mechanical engineering at the University of Michigan, joined Fairbanks, Morse in 1919, following service in World War I, and has held various positions in manufacturing, service, and sales at Beloit, Dallas, Tex., New York and Chicago.

Mr. Wright graduated from the University of Kansas and, after serving a short time in the company's Beloit works, became associated with the sales offices at

J. W. Wright

Cleveland, Ohio, and Buffalo, N. Y. He was later transferred to Kansas City as field engineer, and in 1938 was appointed Diesel department manager at Dallas. He left that post in 1942 to join the United States Navy. In February, 1946, Mr. Wright was released from active duty with the rank of commander, U. S. Naval Reserve, and in the following March became manager of the Diesel engine department at Kansas City. He was promoted to manager of the general Diesel sales division at Chicago, in April, 1949, which post he held at the time of his more recent appointment.

The name of the **American Fork & Hoe Co.** has been changed to **True Temper Corporation.**

William D. Hoffman has been appointed vice-president of the **Railway Track-Work Company. Robert M. Johnson,** until recently with the Dearborn Chemical Company, has been engaged as sales engineer. Mr. Johnson was associated for six years with the bridge, building, signal and water supply departments of the Chesapeake & Ohio.

OBITUARY

J. Frederic Byers, Sr., chairman of the board of the A. M. Byers Company, died recently in Roosevelt Hospital, New York.

CONSTRUCTION

Canada to Bridge Canso Strait

The Department of Transport of the Canadian government has awarded to Foundation Maritime, Ltd., of Halifax, N. S., a contract for completion, before the close of navigation this year, of test borings at the site of each of eight piers to be included in a proposed $13,500,000 railway-highway bridge across the 3,000-ft. wide Strait of Canso, between the Canadian mainland and Cape Breton Island. Each boring will be made in an average low-tide water depth of 185 ft., and will be carried at least 10 ft. into bedrock, to insure suitable foundations for the future piers, which will have to withstand strong tidal currents through the strait and heavy ice pressures during spring break-ups.

While the borings are under way, baseline surveys are being made and work is going ahead with preparation of plans for the bridge and its approaches, including necessary relocations of railway lines and highways both on the mainland and the island. The bridge, which is expected to require three years for construction, will probably be located between Cape Porcupine, on the mainland, and Balacho Point on Cape Breton island, where the strait is narrowest. Tentative plans call for a short-span, low-level bridge, with clearance of 14 ft. above water at high tide, and 156-ft. vertical lift span close to the Cape Breton shore, for passage of ships. As compared with the present Mulgrave-Point Tupper car ferry, the bridge is expected to save approximately 50 min. in running time of Canadian National trains to and

from the Sydney-North Sydney, N. S. area.

Dr. P. L. Pratley, consulting engineer of Montreal, Que., has been appointed by the government to supervise construction of the bridge. He was one of a board of three engineers who decided in favor of a low-level bridge in preference to a tunnel, a causeway, a high-level bridge or an improved ferry service. A low-level bridge, these engineers reported, was the only one which would show a saving on present operating costs, and consequently the only one which, in their opinion, was economically justified.

Missouri Pacific.—This road plans to reconstruct bridge No. 10 at Rio Vista, Ark., at a cost of approximately $65,000. Work is nearing completion on the Natchez, (Miss.) joint project of the Natchez & Southern (part of the M. P.) and the Illinois Central, involving the construction of 7,254 ft. of industrial lead track and a 242-car capacity yard to serve the International Paper Company mill. Grading work was performed by the Cook Construction Company, Jackson, Miss., and the track work is being completed by company forces.

Northern Pacific-Great Northern.—Contracts have been awarded to the Noble W. White Construction Company and the University Plumbing & Heating Co., Seattle, Wash., for work in connection with construction of four service buildings, at an estimated cost of $350,000, in the coach yards at King Street passenger station, Seattle (owned jointly by the N. P. and G. N.).

Southern Pacific.—This road plans to spend $2,450,000 to replace its rider-operated hump yard at Taylor, Cal. (Los Angeles division), with an automatic car retarder yard. The project will involve the extension of tracks in the receiving yard, retirement and replacement of tracks in the classification hump yard, construction of tracks in the departure yard, and extension and revamping of various other tracks. Some 97,780 ft. of track and 106 switches are to be retired, and 166,289 ft. of track and 171 switches will be installed. The hump yard will be laid out in five groups of eight tracks each, with switches automatically operated from three control towers. Eight car retarders will govern the speed of cars over the hump. A grading contract for $54,550 has been awarded to T. M. Page, Monrovia, Cal. Among the various jobs to be completed in connection with the new yard are: Construct three reinforced concrete control towers, a humpmaster's office, inspection pit, wash and locker rooms and five prefabricated structures; install 9,510 ft. of drainage pipes in classification hump yard and 5,800 ft. of air and water lines to rip and commodity tracks; retire and replace track scales; install floodlights for night operations and journal box oiler at hump; construct pedestrian overpass for employees; and install communications facilities consisting of high and low level speakers and two-way radio control from humpmaster's office to engines and yardmaster's office.

Other projects planned by the S. P. are: Construct industrial trackage to serve the General Food Corporation at Estudillo, Cal. ($38,795); remodel portion of bridge over Sacramento river (second crossing), at Redding, Cal. ($174,431); construct two icing tracks of 3,080 ft. and rearrange tracks, at Coachella, Cal. ($29,535); install piping, treating plant and power connection at Tucumcari, N. M., for the purpose of taking water from the Conchas Dam project to bolster a decreasing water supply, and install additional facilities at El Paso, Tex., for servicing newly acquired Diesel locomotives ($41,160).

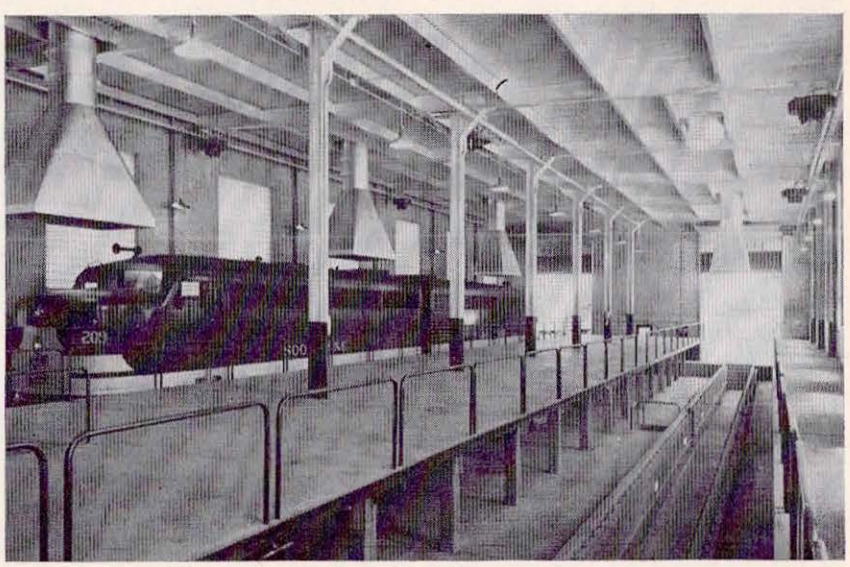
Texas & Pacific.—This road has awarded a $94,000 contract to the Fulcher Burgher Construction Company, Austin, Tex., for remodeling and modernizing the combination freight and passenger station at Odessa, Tex.

Union Pacific-Chicago, Burlington & Quincy.—These two roads are sharing an estimated $200,000 expenditure at the mail transfer depot in Council Bluffs, Iowa, involving construction of a new concrete transfer platform, extension of present facilities and re-arrangement of tracks.

ORGANIZATIONS

The first regular meeting of the newly formed **Chicago Railroad Diesel Club** will be held July 14, at 7 p.m., in the Bal Tabarin room of the Sherman Hotel, Chicago. This meeting, and all future monthly meetings, will be open to all, with the programs particularly slanted to be of interest to those involved in maintenance, operation or supply of Diesel power. At the first meeting a slide-illustrated paper on speed and load control for Diesel locomotives will be presented by M. Sudheimer, instructor in Electro-Motive's Diesel locomotive training center at LaGrange, Ill. Present plans for subsequent meetings call for similar programs, with an illustrated paper presented by a representative of one of the locomotive builders, followed by a floor discussion. Officers of the club are: President, W. P. Miller, assistant superintendent of Diesel equipment, Chicago & North Western; first vice-president, R. I. Fort, assistant research engineer, Illinois Central; second vice-president, O. P. Jones, electrical engineer, C. & N. W.; and, third vice-president, F. T. Kuhns, general foreman, Chicago, Milwaukee, St. Paul & Pacific.

The 1949 annual meeting and dinner of the **Railway Business Association** will be held at the Stevens Hotel, Chicago, on November 18.



MODERN SHOP FOR SOO LINE DIESELS—The Minneapolis, St. Paul & Sault Ste. Marie has added to its facilities at Shoreham Shops, Minneapolis, Minn., a new building for the servicing and inspection of Diesel locomotives. Constructed of reinforced concrete, brick and steel as an addition to a section of the existing roundhouse, the new service shop is 173 ft. long and 60 ft. wide. It has two inspection pits, two working levels, glass block windows, electrically operated overhead doors, hood-type ventilators to collect Diesel exhaust fumes, and reflector-type lights for all working areas, including the pits. The building is heated by unit-type heaters, some of which are arranged to aid in melting snow and ice from the Diesels during the winter months

EQUIPMENT AND SUPPLIES

SIGNALING

The **Boston & Maine** has awarded a contract to the Union Switch & Signal Co. covering installation of centralized traffic control on 10.5 mi. of single track from Crescent Tower, N. Y., to Scotia. The style B-60 control machine will be located in Crescent Tower. Other material includes the code equipment, style H-2 searchlight signals, S-20 spring switch layouts, SL-6A electric locks, and the necessary relays, rectifiers, transformers and housings.

The **Missouri Pacific** plans to install 5.5 mi. of centralized traffic control between Pleasant Hill, Mo., and Strasburg, at an estimated cost of $62,000.

LOCOMOTIVES

The **Manitou & Pike's Peak** has ordered two specially built 400-hp. Diesel-electric locomotives from the General Electric Company, to be delivered in 1950.

FINANCIAL

Atchison, Topeka & Santa Fe.—*New Director.*—N. Loyall, senior partner in the firm of McLaren, Goode & Co., San Francisco, Cal., has been elected a director of this road.

Des Moines & Central Iowa.—*Acquisition.*—M. H. Salzberg, M. P. Gross, and M. H. Snerson, officers and stockholders of H. E. Salzberg & Co., a New York corporation dealing in used railroad and power equipment, have applied to the Interstate Commerce Commission for authority to acquire control of this road, as reorganized, through ownership of its common stock. The application said the applicants hold $1,081,000 of the bankrupt company's first mortgage bonds. Under the approved plan of reorganization (see *Railway Age* of October 2, 1948, page 69, and July 2, page 53), they will be entitled to $400 of new first mortgage bonds and 12 shares of new common stock for each $1,000 of bonds. The stock received by them in this exchange would total 12,972 shares of the 17,142 shares which the reorganized company will have outstanding.

New Securities

Application has been filed with the Interstate Commerce Commission by:

Chesapeake & Ohio.—To assume liability for $3,990,000 of equipment trust certificates to finance in part 51 Diesel-electric switching locomotives of 1,000 hp. each. The Electro-Motive Division of General Motors Corporation will build 28 of the locomotives—22 at $97,969 each and 6 at $101,223 each. The American Locomotive Company will build 23—11 at $99,612 each and 12 at $97,812 each. The certificates would be dated August 1, would mature in 30 semi-annual installments of $133,000 each, beginning February 1, 1950, and would be sold on the basis of competitive bids, with the interest rate being fixed by such bids.

Division 4 of the I.C.C. has **authorized**:

Chicago, Burlington & Quincy.—To assume liability for $2,060,000 of equipment trust certificates to finance in part 300 refrigerator cars estimated to cost a total of $2,597,000 (see *Railway Age* of May 28, page 58). The certificates will be dated June 1 and will mature in 20 semiannual installments of $103,000 each beginning December 1. The commission's report approved a selling price of 99.561 with a 2 per cent interest rate—the bid of Halsey, Stuart & Co., which will make the average annual interest cost approximately 2.09 per cent. The certificates were reoffered to the public at prices yielding from 1.2 to 2.325 per cent, according to maturity.

Southern Pacific.—To assume liability for $12,480,000 of series BB equipment trust certificates to finance in part the acquisition of 20 Diesel-electric locomotives and 1,242 freight cars at an estimated total cost of $18,735,802 (see *Railway Age* of June 11, page 64.) The certificates will be dated July 1 and will mature in 15 annual installments of $832,000 each, beginning July 1, 1950. The commission's report approved a selling price of 99.062 with a 2⅜ per cent interest rate—the bid of Halsey, Stuart & Co., and 20 associates, which will make the average annual interest cost approximately 2.53 per cent. The certificates were reoffered to the public at prices yielding from 1.4 to 2.7 per cent, according to maturity.

Average Prices Stocks & Bonds

	July 5	Last week	Last year
Average price of 20 representative railway stocks	36.43	36.16	51.06
Average price of 20 representative railway bonds	82.81	84.17	91.46

Dividends Declared

Atchison, Topeka & Santa Fe.—$1.50, quarterly, payable September 1 to holders of record July 29.

Camden & Burlington County.—75¢, semiannual, payable July 1 to holders of record June 15.

Carolina, Clinchfield & Ohio.—$1.25, quarterly, payable July 20 to holders of record July 8.

Delaware.—$1, semiannual, payable July 1 to holders of record June 15.

Maine Central.—6% prior preferred, $1.50, quarterly, payable July 1 to holders of record June 25.

Minneapolis & St. Louis.—25¢, payable August 1 to holders of record July 22.

Norfolk & Western.—75¢, quarterly, payable September 9 to holders of record August 10; 4% adjustment preferred, 25¢, quarterly, payable August 10 to holders of record July 13.

Philadelphia & Trenton.—$2.50, quarterly, payable July 9 to holders of record July 1.

Reading.—50¢, quarterly, payable August 11 to holders of record July 14.

West Jersey & Seashore.—$1.50, semiannual, payable July 1 to holders of record June 15.

Western New York & Pennsylvania.—$1.50, semiannual; 5% preferred, $1.25, semiannual; both payable July 1 to holders of record June 30.

Western Pacific.—75¢, quarterly, payable August 15 to holders of record August 1.

RAILWAY OFFICERS

EXECUTIVE

A. T. Lowmaster, who has retired as executive vice-president of the Chesapeake & Ohio at Richmond, Va., as reported in the *Railway Age* of June 25, was born at McCutchensville, Ohio, on August 29, 1882. Mr. Lowmaster entered railroad service on October 3, 1900, as a clerk and chore boy in the master carpenter's office of the Erie and subsequently served in various clerical capacities at Huntington, Ind., and Chicago until April, 1911, when he went with the C. & O. as chief clerk to superintendent of terminals and construction at Chicago.

A. T. Lowmaster

He was appointed general agent at Chicago in March, 1912; superintendent terminals at Chicago in July, 1916; assistant superintendent at Richmond in November, 1917; superintendent transportation at Richmond in July, 1923; general superintendent transportation at Richmond in October, 1926; and general manager at Richmond in February, 1933. Mr. Lowmaster served as vice-president and general manager, also at Richmond, from January, 1937, to March, 1943, when he was appointed executive vice-president, the position he held until his retirement.

Rolla R. Fenner, vice-president of the Texas-Mexican, at Laredo, Tex., retired on June 30, due to ill health. Mr. Fenner, whose railroad career extended over 43 years, was born on September 25, 1888, at Beeville, Tex. He attended high school in his home town and later studied at Magnolia Business College, Houston, Tex., entering railroad service in March, 1906, as freight brakeman on the Galveston, Harrisburg & San Antonio (now Southern Pacific Lines) at Victoria, Tex. In 1908 he was advanced to yardmaster at Rosenberg, Tex., and later became a conductor. He was again appointed yardmaster in 1913, which position he held successively at Victoria, Tex., Glidden and Houston, interrupted only by military service during World

War I. In August, 1930, Mr. Fenner joined the T.-M. as a switchman at Corpus Christi, Tex., and subsequently served as brakeman and conductor until his promotion to superintendent of transportation in March, 1942. The following June he was appointed general manager and later became vice-president.

Carl A. Taylor, whose election as vice-president and general manager of the Chesapeake district of the Chesapeake & Ohio at Richmond, Va., was reported in the *Railway Age* of June 25, was born at Kenton, Del., on June 15, 1891, and was graduated from the University of Delaware in 1912. Starting his railroad career with the Pennsylvania in the fall of that year, as signal repairman, he advanced to the position of supervisor of telegraph and signals by 1925, when he joined the C. & O. as a signal office engineer. In 1940 he became assistant general superintendent and two years later general superintendent of the road, with headquarters at Huntington, W. Va. Mr. Taylor was appointed general manager, Chesapeake district in 1947, with headquarters at Richmond, which position he will continue to hold in addition to the vice-presidency.

Carl A. Taylor

Thomas J. Thomas, assistant to president of the Chicago, Burlington & Quincy at Chicago, retired on June 30. Born at Collinsville, Ill., he entered railroad service in July, 1904, with the Chicago & Eastern Illinois at Danville, Ill., holding various clerical posts with that road until 1913. From 1914 to 1918, he was secretary and chief clerk to general superintendent of the Terre Haute & Southeastern (now Chicago, Milwaukee, St. Paul & Pacific) at Terre Haute, Ind., and later served with the United States Railroad Administration until 1920, when he joined the Burlington as chief clerk to the president at Chicago. He was advanced to superintendent of the Quincy, Omaha & Kansas City (now C. B. & Q.) at Kansas City Mo., in 1922, and was appointed assistant to the president of the Burlington in February, 1925. Mr. Thomas also became president of the Valier Coal Company (C. B. & Q. subsidiary) the following August, and was named associate deputy, Solid Fuels Administration for War, in June, 1942, and director of production and director of health and safety, Coal Mines Administration, in May, 1943. He resigned from those government posts in November, 1943, but remained on the staff of the Secretary of Interior as special consultant until February, 1945, when he returned to the Burlington as assistant to president.

Ross S. Marshall, senior vice-president of the Chesapeake & Ohio, with headquarters at Cleveland, Ohio, retired on July 1 under the pension rules of the company, after 50 years of railroad service, 27 of which were with the C.&O.

Maurice G. Roberts, whose retirement as vice-president and general counsel of the St. Louis-San Francisco at St. Louis, Mo., was reported in the *Railway Age* of June 25, worked on several newspapers in the South and Southwest prior to entering the legal profession. He also served as trial attorney for the Chicago, Burlington & Quincy in Missouri for eight years and joined the Frisco in 1920, as general attorney and commerce counsel. In 1941 Mr. Roberts was appointed general counsel for the trustee of the Frisco and, when the road was reorganized in January, 1947, he became vice-president and general counsel.

Maurice G. Roberts

Fred W. Okie, president of the Union Railroad (Pittsburgh, Pa.), one of the country's largest switching roads, was elected also president of the Bessemer & Lake Erie at a meeting of that company's board of directors at Pittsburgh on July 2. The B. & L. E. operates a total of 224 mi. of line between North Bessemer and Erie, Pa., and Conneaut Harbor, Ohio, with various branches. Mr. Okie's election fills the vacancy created by the death of **Frank I. Snyder** on June 18, reported in the *Railway Age* of June 25.

Mr. Okie was born on June 7, 1907, and received his B.S. in C.E. degree from Virginia Military Institute in 1929. He entered railroad service in the engineering department of the Cincinnati, New Orleans & Texas Pacific (Southern system) during the summers of 1924 and 1925 and served as student apprentice on a section gang during the summers of 1926, 1927 and 1929. From May, 1930, to September, 1933, Mr. Okie was assistant trainmaster, becoming trainmaster on the latter date. He was appointed trainmaster of the Alabama Great Southern (Southern system) in February, 1936, and became superintendent of the Mobile division of the Southern in February, 1938, being appointed superintendent of the Alabama Great Southern and the New Orleans & Northeastern eight months later. From August 1, 1939, to February 15, 1942, Mr. Okie served as superintendent of the Birmingham division of the Southern and the Northern Alabama. During World War II he commanded the 727th Railway Operating Battalion in its campaign through North Africa, Sicily, Italy and France. He also served on the staff of Major General Carl R. Gray, Mr. Okie holds the reserve rank of colonel. He returned to the Southern as superintendent of the Birmingham division on January 1, 1946, becoming general manager of the Western lines of the system two months later. Mr. Okie was elected president of the Union railroad on August 1, 1946, which position he will continue to hold.

Fred W. Okie

J. M. Fields, assistant vice-president of the Atlantic Coast Line, has been elected vice-president—traffic, with headquarters as before at Wilmington, N. C., succeeding **R. J. Doss,** whose death on June 26 was reported in the *Railway Age* of July 2. Mr. Fields was born near Swainsboro, Ga., on August 7, 1896, and attended the public schools of Georgia and the University of Toulouse, France. He entered railroad service on the Georgia Railroad in 1916 at Atlanta, Ga., joining the Coast Line in 1920 as stenographer in the office of the general agent at Atlanta. Mr. Fields was appointed chief clerk in the office of the general agent at Atlanta in 1921; traveling

freight agent at Atlanta in 1923; commercial agent at Savannah, Ga., in 1924; eastern freight agent at New York in 1932; assistant general freight agent at Savannah in 1937; manager development

Fabian Bachrach

J. M. Fields

service at Wilmington in 1938; assistant to general traffic manager at Wilmington in 1941; assistant to vice-president at Wilmington in May, 1942, and assistant vice-president in September, 1942.

Charles J. Geyer, whose election as vice-president—maintenance of way and construction—system, of the Chesapeake & Ohio at Richmond, Va., was reported in the *Railway Age* of June 25, was born at Zanesville, Ohio, on April 6, 1889. Mr. Geyer attended Marshall College, Huntington, W. Va., and began his railroad career with the C. & O. in April,

Charles J. Geyer

1908, as a rodman in the construction department at Huntington, advancing to assistant engineer in 1918, and to division engineer in 1924. He was appointed assistant to the vice-president in 1929 and became general manager of the road in 1943. Mr. Geyer was appointed assistant vice-president in 1947, which position he held until his recent promotion.

K. M. Kerr, chief clerk to the vice-president of the Atlantic Coast Line, has been appointed assistant to vice-president, traffic department, with headquarters as before at Wilmington, N. C.

Eugene G. Nahler, whose appointment as vice-president and general counsel of the St. Louis-San Francisco at St. Louis, Mo., was reported in the *Railway Age* of June 25, is a native of St. Louis and a graduate of Benton College of Law. Admitted to the Missouri bar in 1913, he

Eugene G. Nahler

was employed by the Terminal Railroad Association of St. Louis for eight years before entering the law department of the Frisco in May, 1913. Mr. Nahler subsequently served as attorney and general attorney and later became general solicitor of St. Louis, the post he held until his recent appointment.

FINANCIAL, LEGAL & ACCOUNTING

Louis Frandsen, assistant land commissioner of the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to land commissioner in charge of the road's non-operative lands in California, Oregon, Nevada and Utah.

James A. Maclean, office assistant to the president of the New York Central, has been appointed an assistant secretary of the company and its leased and affiliated companies.

W. R. Rouse, who, for the past three years, has handled special assignments for the Union Pacific as assistant vice-president, with headquarters at Omaha, Neb., has resumed his former position of assistant western general counsel. **C. B. Matthai,** assistant general solicitor at Omaha, has been promoted to general solicitor and has been succeeded by **George C. Holdrege,** general attorney. **R. B. Hamer,** assistant general attorney, has replaced Mr. Holdrege. **James A. Wilcox,** assistant to the assistant vice-president, and **John J. Burchell,** attorney, have been promoted to assistant general attorneys.

OPERATING

Harry H. Kaplan, formerly in charge of dining cars on the Chicago, Rock Island & Pacific's "Rocky Mountain Rocket," has been promoted to superintendent of dining car service, system, with headquarters at Chicago, succeeding **T. D. Wickham,** who has retired.

Edward Heller Buelow, whose promotion to superintendent, Memphis division, Illinois Central, with headquarters at Memphis, Tenn., was reported in the *Railway Age* of June 11, was born at Ruston, La., on December 6, 1905, and attended high school at Vicksburg, Miss. He entered railroad service in April, 1924, with the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific (now part of the I. C.), subsequently holding various clerical positions at Vicksburg until January, 1930, when he was advanced to

Edward Heller Buelow

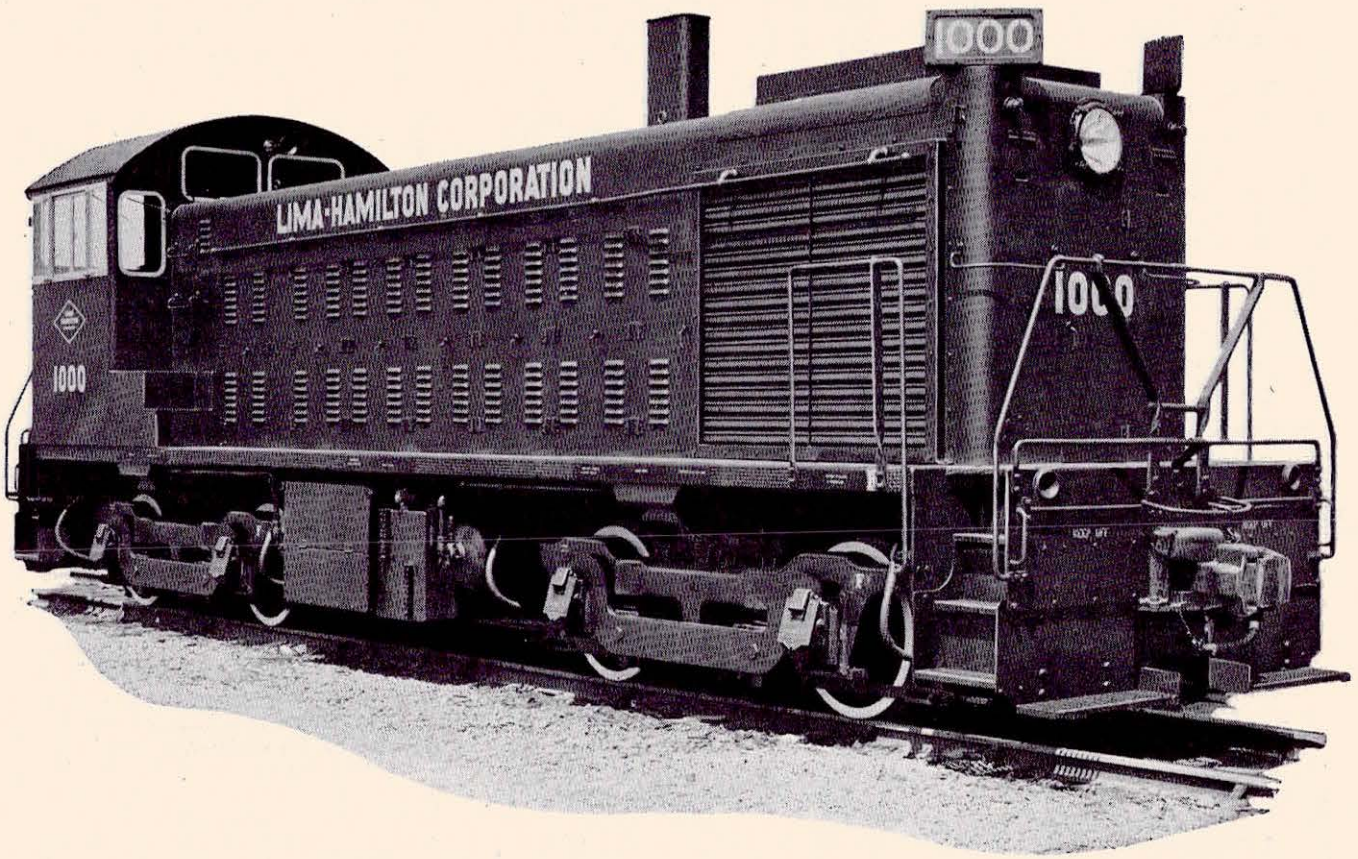
chief clerk to general foreman, mechanical department, at Monroe, La. In May, 1930, he returned to Vicksburg to serve successively as material distribution clerk; engine, file and insurance clerk; efficiency clerk in the master mechanic's office; and chief clerk to the master mechanic. He was promoted to assistant trainmaster at Vicksburg in 1941, and became trainmaster the following year, serving later in that capacity at Memphis, Greenwood, Miss., and Grenada. Mr. Buelow was appointed trainmaster at Jackson, Tenn., in March, 1947, from which post he was promoted to superintendent.

T. J. Anderson, trainmaster of the Atchison, Topeka & Santa Fe at Dodge City, Kan., has been promoted to superintendent of the Missouri division, with headquarters at Marceline, Mo., succeeding **M. M. Killen,** transferred to the Middle division, at Newton, Kan. Mr. Killen has replaced **H. G. Arnold,** who has retired.

P. B. Collier, supervisor of bridges and buildings of the Missouri Pacific at St. Louis, Mo., has been appointed superin-

News Department continued on next left-hand page

Here it is !!!



On June 14th, the new Lima-Hamilton 1000-hp diesel switcher was shown for the first time at Lima, Ohio.

To date, 31 of these switchers have been sold — 30 to major Class I railroads and one to a steel mill. Deliveries have already started.

The diesel is our own — a heavy-duty 8-cylinder 4-cycle 1200-hp engine that has been designed from saddle up specifically for switcher service. A full 1000 brake horsepower is available for traction. Electrical equipment is Westinghouse.

You're going to hear a lot about this switcher — about its get-up-and-go and the way it handles — about the way parts have been located so they are easy to get to. The traditional Lima-Hamilton fineness of design and manufacture, so long a characteristic of Lima steam locomotives, has now been carried into the diesel-electric field.

LIMA HAMILTON CORPORATION

tendent of scales at that point, succeeding **F. H. Schlinkert,** who has retired after 54 years of service.

C. L. Franklin, assistant general manager of the Chicago, Rock Island & Pacific at El Reno, Okla., has been appointed acting general manager at Chicago, succeeding **G. W. Raney,** who is on a leave of absence. **B. R. Dew,** superintendent of the Rock Island division, with headquarters at Rock Island, Ill., has replaced Mr. Franklin and has, in turn, been succeeded by **B. F. Wells.**

E. C. Sheffield, acting superintendent, Houston (Tex.) terminal, International-Great Northern (part of Missouri Pacific Lines), has been transferred to the Kingsville and DeQuincy divisions, with headquarters at Kingsville, Tex., succeeding **A. F. Judd,** who is ill. **A. L. Adams** has replaced Mr. Sheffield, and **F. M. Crump** has been appointed trainmaster at the Houston terminal.

J. C. Bussey has been appointed general manager of the Des Moines & Central Iowa, with headquarters at Des Moines, Iowa.

Robert G. Vawter, assistant general superintendent of the Western General division, Chesapeake district, Chesapeake & Ohio, at Huntington, W. Va., has been appointed general superintendent of the Eastern General division, Chesapeake district, at Clifton Forge, Va., succeeding **Lee A. Grubbs,** who retired on July 1 under the pension rules of the company, after 49 years of service with the C.&O.

TRAFFIC

J. D. Malefyt, chief of the Union Pacific's service bureau at Omaha, Neb., has been promoted to general agent at Reno, Nev., succeeding **E. E. Larkin,** who has retired after more than 44 years of service. **F. M. Purnell** has been appointed general agent at Gering, Neb., replacing **S. C. Clarke,** who has retired.

Andre Thubet has been appointed general agent of the Canadian National at Paris, France, succeeding **A. L. Regamey,** who has retired on pension.

S. G. Williams, assistant general freight agent of the Atlantic Coast Line, has been appointed assistant to freight traffic manager, with headquarters as before at Wilmington, N. C.

George A. Hill, assistant general freight agent of the Pennsylvania, at Chicago, retired on July 1, after more than 52 years of service. **H. Percy Bates,** district freight agent at Chicago, has been advanced to division freight agent at that point.

H. A. Tenney, district passenger agent of the Southern Pacific Lines in Texas & Louisiana, at Houston, Tex., has been promoted to assistant general passenger agent, with the same headquarters, succeeding **Tom Hood,** who has retired after 50 years of service with the S. P. Lines. **H. A. Shiver,** traveling passenger agent, with headquarters at Houston, has been advanced to succeed Mr. Tenney.

Benjamin D. Rhodes, whose appointment as Pacific Coast freight traffic manager of the Pennsylvania, with headquarters at San Francisco, Cal., was reported in the *Railway Age* of June 11, is a native of Indiana and received his higher education at business school and LaSalle Extension University. He entered railroad service with the Pennsylvania in 1939, at Indianapolis, Ind., and subsequently served in various clerical capacities and as freight representative, district freight agent, foreign freight agent at Chicago, division freight agent at Indianapolis and assistant general freight agent at St. Louis, Mo. In 1940 Mr. Rhodes was promoted to general Western freight agent, which position he held at the time of his recent appointment.

Benjamin D. Rhodes

MECHANICAL

Clyde B. Hitch, chief mechanical officer of the Chesapeake district of the Chesapeake & Ohio, with headquarters at Richmond, Va., retired on July 1 under the pension rules of the company, after 47 years of railroad service, 41 of which were with the C.&O. **Richard J. Williams,** chief mechanical officer of the Pere Marquette district, with headquarters at Detroit, Mich., also retired on July 1 under the pension rules, after 50 years of railroad service. **Elmer A. Kuhn,** superintendent motive power of the Pere Marquette district, will succeed Mr. Williams, with full jurisdiction over the mechanical department, but will retain his former title, and maintain headquarters as before at Grand Rapids, Mich. The position of chief mechanical officer on the Pere Marquette district has been abolished.

John W. Rowley, assistant master mechanic of the Toronto, Hamilton & Buffalo, has been promoted to master mechanic, with headquarters as before at Hamilton, Ont., succeeding **Ross Etherington,** who has retired under the company's pension regulations. The position of assistant master mechanic has been abolished.

PURCHASES & STORES

E. C. DeWoody has been appointed district storekeeper of the Missouri Pacific, with headquarters at St. Louis, Mo., succeeding **J. M. Doolittle,** who has retired after 40 years of service.

ENGINEERING AND SIGNALING

Harold S. Ashley, engineer of track of the Boston & Maine, has been appointed assistant engineer maintenance of way, with headquarters as before at Boston, Mass. **John P. Canty,** assistant to engineer maintenance of way, has resigned, effective July 1, after 59 years of service.

T. B. Hutcheson, assistant to chief engineer of the Seaboard Air Line at Norfolk, Va., has been promoted to assistant chief engineer, with the same headquarters, succeeding **C. H. Burks,** who has been appointed division engineer at Jacksonville, Fla. **R. E. Tew,** division engineer at Americus, Ga., succeeds Mr. Hutcheson as assistant to chief engineer at Norfolk. Mr. Burks replaces **J. R. Traphoner,** who has been transferred to Tampa, Fla. **W. R. Fudge,** assistant division engineer at Atlanta, Ga., succeeds Mr. Tew as division engineer at Americus.

Mr. Tew was born at Portsmouth, Va., and was graduated from North Carolina State College. He joined the Seaboard in 1933 as apprentice section foreman at Birmingham, Ala., and subsequently served as assistant to division engineer and division engineer at Savannah, Ga., before going to Americus in 1947.

A photograph and biography of Mr. Hutcheson were published in the *Railway Age* of October 30, 1948, page 110.

OBITUARY

Dr. Victor B. Kieffer, division surgeon of the Missouri-Kansas-Texas' Hospital Association at St. Louis, Mo., died on June 23, in that city.

Edward Lawrence Burbank, who retired in 1932 as assistant general freight agent of the Illinois Central at Chicago, died on June 28, at his home in River Forest, Ill., at the age of 80.

Ralph Blaisdell, who retired on May 31, 1946, as chief accounting officer of the Florida East Coast at St. Augustine, Fla., died in that city on June 26 in his 85th year.

Operating Revenues and Expenses table appears on next left-hand page

88

new locomotives on the

TURKISH STATE RAILWAYS

are *all* equipped with...

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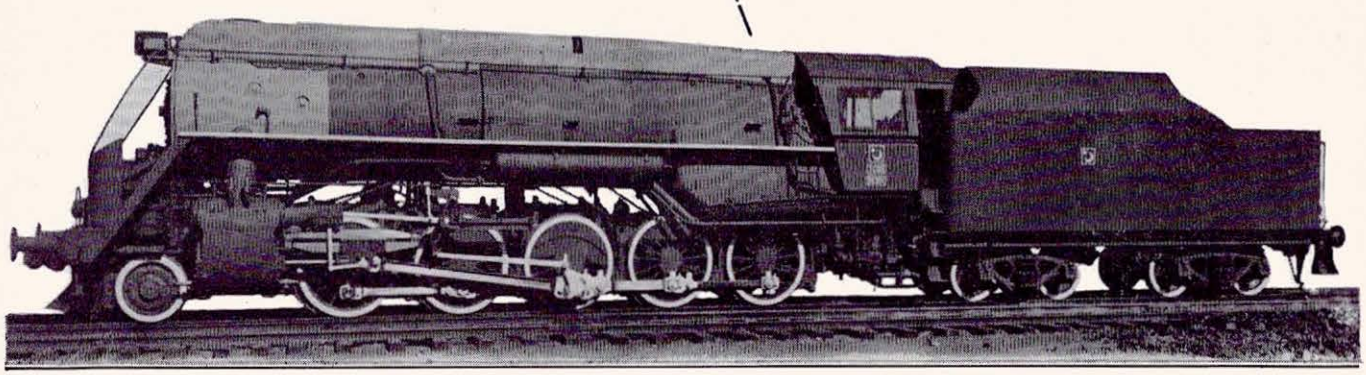

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OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM RAILWAYS

Compiled from 128 monthly reports of revenues and expenses representing 132 Class I steam railways.

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF APRIL 1949 AND 1948

Item	United States		Eastern District		Southern District		Western District	
	1949	1948	1949	1948	1949	1948	1949	1948
Miles of road operated at close of month	226,671	227,204	53,490	53,699	46,050	46,162	127,131	127,343
Revenues:								
Freight	$620,293,199	$601,375,640	$241,065,118	$226,206,683	$133,094,890	$118,564,709	$246,133,191	$256,604,248
Passenger	68,659,374	69,490,190	36,208,076	35,092,108	11,705,543	11,580,067	20,745,755	22,818,015
Mail	18,896,494	15,499,223	7,111,774	5,639,899	3,419,410	2,732,391	8,365,310	7,126,933
Express	6,967,635	10,874,958	2,015,129	4,118,378	1,356,475	1,797,026	3,596,031	4,959,554
All other operating revenues	32,442,611	31,728,948	14,795,653	13,938,160	5,524,758	5,445,842	12,122,200	12,344,946
Railway operating revenues	747,259,313	728,968,959	301,195,750	284,995,228	155,101,076	140,120,035	290,962,487	303,853,696
Expenses:								
Maintenance of way and structures	113,261,565	106,772,738	40,982,698	36,746,672	23,218,827	21,779,279	49,060,040	48,246,787
Depreciation	10,612,852	10,309,553	4,458,867	4,372,765	1,851,372	1,785,502	4,302,613	4,151,286
Retirements	955,735	1,751,883	427,099	424,127	232,849	123,062	295,787	1,204,694
Deferred maintenance	*300,586	*427,889	*113,410	*27,260	*54,552	*113,360	*132,624	*287,269
Amortization of defense projects	152,603	141,469	16,835	10,507	46,478	42,955	89,290	88,007
Equalization	*4,452,033	*2,040,177	*2,010,123	*193,664	*391,023	*872,156	*2,050,887	*974,357
All other	106,292,994	97,037,899	38,203,430	32,160,197	21,533,703	20,813,276	46,555,861	44,064,426
Maintenance of equipment	142,019,613	132,725,267	58,785,069	55,503,670	28,719,766	26,041,692	54,514,778	51,179,905
Depreciation	22,524,224	20,463,985	8,626,620	8,065,773	5,165,453	4,510,783	8,732,151	7,887,429
Retirements	*76,507	*41,685	*17,387	*1,988	*8,644	*11,451	*50,476	*28,246
Deferred maintenance and major repairs	*131,624	*382,236	*55,414	.....	*49,882	*76,702	*26,328	*305,534
Amortization of defense projects	1,222,008	1,225,200	450,967	452,342	238,877	238,927	532,164	533,931
Equalization	68,784	251,920	*21,488	56,457	117,891	271,406	*27,619	*759,943
All other	118,412,728	111,208,083	49,801,771	46,931,086	23,256,071	21,108,729	45,354,886	43,168,268
Traffic	16,629,605	16,320,866	5,597,932	5,429,839	3,392,601	3,573,002	7,639,072	7,318,025
Transportation—Rail line	289,286,742	296,685,637	123,909,215	125,280,754	55,102,785	53,971,546	110,274,742	117,433,337
Miscellaneous operations	9,628,382	10,223,324	3,658,650	3,817,382	1,564,768	1,662,108	4,404,964	4,743,834
General	23,443,945	22,897,639	9,089,752	8,830,096	5,007,859	4,951,354	9,346,334	9,116,189
Railway operating expenses	594,269,852	585,625,471	242,023,316	235,608,413	117,006,606	111,978,981	235,239,930	238,038,077
Net revenue from railway operations	152,989,461	143,343,488	59,172,434	49,386,815	38,094,470	28,141,054	55,722,557	65,815,619
Railway tax accruals	74,794,116	75,356,189	28,030,370	27,599,111	18,643,033	15,708,866	28,120,713	32,048,212
Pay-roll taxes	21,890,412	29,265,713	9,028,144	11,894,967	4,233,722	5,669,120	8,628,546	11,701,626
Federal income taxes	25,478,684	20,205,989	8,734,400	6,034,413	8,686,019	4,443,476	8,058,265	9,728,100
All other taxes	27,425,020	25,884,487	10,267,826	9,669,731	5,723,292	5,596,270	11,433,902	10,618,486
Railway operating income	78,195,345	67,987,299	31,142,064	21,787,704	19,451,437	12,432,188	27,601,844	33,767,407
Equipment rents—Dr. balance	10,082,705	11,574,516	5,040,303	5,444,674	79,216	64,686	4,963,186	6,065,156
Joint facility rent—Dr. balance	3,349 606	3,308,711	1,615,725	1,524,138	548,254	495,496	1,185,627	1,289,077
Net railway operating income	64,763,034	53,104,072	24,486,036	14,818,892	18,823,967	11,872,006	21,453,031	26,413,174
Ratio of expenses to revenue (percent)	79.5	80.3	80.4	82.7	75.4	79.9	80.8	78.3

FOR THE FOUR MONTHS ENDED WITH APRIL 1949 AND 1948

Item	United States		Eastern District		Southern District		Western District	
	1949	1948	1949	1948	1949	1948	1949	1948
Miles of road operated at close of month	226,675	227,216	53,491	53,699	46,042	46,158	127,142	127,359
Revenues:								
Freight	$2,390,299,595	$2,446,976,791	$929,195,716	$935,852,936	$507,706,825	$513,533,981	$953,397,054	$997,589,874
Passenger	285,163,790	296,850,494	148,831,081	150,637,412	50,115,055	51,416,829	86,217,654	94,796,253
Mail	71,439,775	60,228,283	26,262,589	21,435,158	13,093,763	10,855,786	32,083,423	27,937,339
Express	92,442,597	40,915,545	6,161,950	12,814,283	4,741,126	7,871,292	11,539,521	20,229,970
All other operating revenues	123,407,323	127,239,383	55,168,064	56,216,960	21,434,657	22,176,615	46,804,602	48,845,808
Railway operating revenues	2,892,753,080	2,972,210,496	1,165,619,400	1,176,956,749	597,091,426	605,854,503	1,130,042,254	1,189,399,244
Expenses:								
Maintenance of way and structures	417,352,039	409,075,851	14,314,501	147,544,977	88,390,712	89,217,093	179,646,826	172,313,781
Depreciation	42,261,873	41,216,296	17,783,493	17,506,147	7,408,433	7,141,100	17,069,947	16,569,049
Retirements	3,386,809	3,317,717	1,006,258	764,629	471,515	358,039	1,909,036	2,195,049
Deferred maintenance	*876,440	*1,546,409	*253,241	*65,892	*185,829	*612,457	*437,370	*868,060
Amortization of defense projects	592,518	842,527	60,881	47,203	191,095	171,546	340,542	623,778
Equalization	10,258,887	9,775,503	5,362,572	5,186,545	3,391,883	2,112,756	1,504,432	2,476,202
All other	361,728,392	355,470,217	125,354,538	124,106,345	77,113,615	80,046,109	159,260,239	151,317,763
Maintenance of equipment	558,131,718	550,709,367	228,972,604	233,921,346	112,116,923	110,602,884	217,042,191	206,185,137
Depreciation	89,421,420	80,319,781	34,405,770	31,513,187	20,099,583	17,872,038	34,916,067	30,934,556
Retirements	*261,540	*440,742	*50,487	*36,420	*40,296	*100,443	*170,757	*303,879
Deferred maintenance and major repairs	*581,748	*1,626,391	*294,130	.....	*181,084	*353,735	*106,534	*1,272,656
Amortization of defense projects	4,888,362	4,947,823	1,803,924	1,808,163	955,545	956,642	2,128,893	2,183,018
Equalization	902,874	1,718,002	25,070	350,479	789,446	1,225,725	88,358	141,794
All other	463,762,350	465,790,894	193,082,457	200,285,937	90,493,729	91,002,653	180,186,164	174,502,304
Traffic	65,668,076	63,228,838	22,389,162	21,055,991	13,936,193	14,232,333	29,342,721	27,940,514
Transportation—Rail line	1,190,245,850	1,250,546,142	503,752,278	536,983,096	222,091,745	233,220,630	464,401,827	480,342,416
Miscellaneous operations	41,047,902	43,253,415	15,533,888	16,352,482	6,658,433	7,195,553	18,855,581	19,705,380
General	93,804,315	89,782,403	36,451,787	34,334,610	19,980,412	19,527,101	37,372,116	35,920,692
Railway operating expenses	2,366,249,900	2,406,596,016	956,414,220	990,192,502	463,174,418	473,995,594	946,661,262	942,407,920
Net revenue from railway operations	526,503,180	565,614,480	209,205,180	186,764 247	133,917,008	131,858,909	183,380,992	246,991,324
Railway tax accruals	280,229,564	312,579,377	106,489,460	110,940,530	67,432,254	70,733,952	106,307,850	130,904,895
Pay-roll taxes	85,584,910	121,139,799	35,203,402	50,429,964	16,671,010	23,812,762	33,710,498	46,897,073
Federal income taxes†	87,241,736	91,543,591	30,880,568	23,398,469	28,269,034	25,598,376	28,092,134	42,546,746
All other taxes	107,402,918	99,895,987	40,405,490	37,112.097	22,492,210	21,322,814	44,505,218	41,461,076
Railway operating income	246,273,616	253,035,103	102,715,720	75,823,717	66,484,754	61,124,957	77,073,142	116,086,429
Equipment rents—Dr. balance	40,231,270	43,600,844	18,891,335	21,787,715	*1,084,668	*2,816,754	22,424,603	24,629,883
Joint facility rent—Dr. balance	12,863,427	13,683,608	6,071,791	6,444,464	2,015,788	2,070,556	4,775,848	5,168,588
Net railway operating income	193,178,919	195,750,651	77,752,594	47,591,538	65,553,634	61,871,155	49,872,691	86,287,958
Ratio of expenses to revenues (percent)	81.8	81.0	82.1	84.1	77.6	78.2	83.8	79.2

† Includes income tax and surtax.
* Decrease, deficit, or other reverse item.
Compiled by the Bureau of Transport Economics, Interstate Commerce Commission. Subject to revision.

GATX

SERVICE FOR SHIPPERS

Specialized tank cars for more efficient shipping of liquids are designed and built at General American's plants.

General American's maintenance shops, located throughout the country, keep GATX cars rolling.

In cooperation with the railroads, experienced record keeping and traffic control distribute GATX cars to meet shippers' special and seasonal requirements.

The GATX reporting mark identifies the General American fleet of more than 40,000 tank cars of 207 specialized types. This fleet, built in General American's own plants and serviced by General American's shops and offices everywhere, continues to give shippers the safe, economical transportation of bulk liquids they need.

GATX GENERAL AMERICAN TRADE MARK

GENERAL AMERICAN
Transportation Corporation

135 South LaSalle Street • Chicago

District Offices: Buffalo • Cleveland • Dallas
Houston • Los Angeles • New Orleans • New York
Pittsburgh • St. Louis • San Francisco • Seattle
Tulsa • Washington
Export Dept., 10 East 49th Street, New York 17, New York

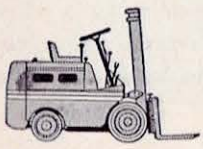
Greater Service to Fork-Truck Users

Greater Opportunities for Men Who Sell Them —

Clark Dealer Plan Achieves **Both**

WITH sales of its fork-lift trucks and industrial towing tractors exceeding all expectations, and with its position of production and engineering leadership firmly rooted in rich, productive soil, Clark Equipment Company, in its 30th year as a builder of materials-handling machines, has found it desirable to establish a nation-wide organization of independent franchised dealers as exclusive distributors of the products of its Industrial Truck Division.

THIS is indeed a far cry from 1939 when the entire output of the Industrial Truck Division was sold with ease by a handful of men!



TODAY'S volume is twenty times that of 1939; and the Company's stature—financial and engineering—is more than twenty times as great as in 1939. A considerable number of the '39 machines are in daily service, and many older machines are in regular operation after 20 and 25 years. The conviction is natural that 30 years hence many '49 machines will still be "on the job" alongside the new output of 1979. There will be no "orphans" bearing the name "Clark."

TO KEEP PACE with increasing demands, and to deliver the broad and competent service which Industry expects from Clark, the Company has chosen this plan of selling through independent dealers as a sound and logical evolution. Until the middle of 1948, approximately one-third of Clark's Industrial Truck Division representatives were on an independent dealer basis. It is expected that by the end of 1949 the nation-wide dealer organization will be complete.

HEADING up the dealerships or actively participating in them are key men of Clark's erstwhile factory-branch sales offices —factory-trained men, tested and proved as capable materials-handling counselors. These men share with Clark management the conviction that they can deliver, under the new plan, a broader and more valuable service to their customers and to all users of mechanized materials-handling; that they face broader, deeper vistas of opportunities which ambitious men so earnestly desire—opportunities for independence, for building greater earnings by their own efforts, for achieving prestige and leadership in their communities.

ANOTHER influence which furthered the plan is the fact that Clark management historically has been engineers and manufacturers. By decentralizing marketing activities, Clark can intensify its emphasis on development of better materials-handling machines and methods—to the end that Clark products shall achieve even higher excellence at lower cost, shall become still more valuable to industrial users and to the dealers who serve them.

THROUGH your Clark dealer, all the advantages of Clark engineering, integrated production and matchless experience are quickly available to you. He is fully qualified to make an unbiased appraisal of your materials-handling operations, and to recommend the type of machine that will serve you most efficiently at lowest cost. It's "good business" to CONSULT CLARK.

CLARK EQUIPMENT COMPANY

INDUSTRIAL TRUCK DIVISION

BATTLE CREEK 24, MICHIGAN

OTHER PLANTS—BUCHANAN • JACKSON • BERRIEN SPRINGS, MICHIGAN

REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD

AUTHORIZED CLARK DEALERS

ALABAMA: BIRMINGHAM
*M-H EQUIPMENT COMPANY
845 LOMB AVENUE

ARIZONA: PHOENIX
ROBERT H. BRAUN COMPANY
743 GRAND AVENUE

ARKANSAS: LITTLE ROCK
FRED J. VANDEMARK COMPANY
209 EAST MARKAM STREET

CALIFORNIA: FRESNO 1
ROBERT H. BRAUN COMPANY
505 MASON BUILDING

LOS ANGELES 23
*ROBERT H. BRAUN COMPANY
3008 EAST OLYMPIC BLVD.

OAKLAND 3
*GLEN L. CODMAN COMPANY
10521 PEARMAIN STREET

SAN DIEGO
ROBERT H. BRAUN COMPANY
3872 FIFTH AVENUE

STOCKTON
GLEN L. CODMAN COMPANY
409 BELDING BUILDING

COLORADO: DENVER 2
*J. N. MEADE
420 U. S. NATIONAL BANK
Service: FORK LIFT TRUCK SERVICE
2855 WEST 8TH AVENUE

CONNECTICUT: NEW HAVEN
*C. E. REUTTER CORPORATION
66 AMITY ROAD

FLORIDA: TAMPA
CLARK EQUIPMENT COMPANY
1145 ELLAMAE STREET

ILLINOIS: CHICAGO 4
*MODERN HANDLING EQUIP., INC.
310 SOUTH MICHIGAN AVENUE
(Service: Cook County)
LIFT TRUCK SERVICE COMPANY
6919 SOUTH HALSTED STREET

INDIANA: INDIANAPOLIS 5
*W. A. MARSCHKE & SONS
1121 E. 46TH STREET

SOUTH BEND 14
*MATERIALS HANDLING EQUIP. CO. OF SOUTH BEND, IND.
2625 SOUTH MICHIGAN STREET

IOWA: DAVENPORT
*BIG RIVER EQUIPMENT CO.
1344 WEST THIRD STREET

DES MOINES
*BIG RIVER EQUIPMENT CO.
914 GRAND AVENUE, ROOM 255

KANSAS: KANSAS CITY
Sales and Service:
(SEE KANSAS CITY, MISSOURI)

LOUISIANA: NEW ORLEANS
T. G. FRAZEE
910 CARONDELET BLDG.

MAINE: PORTLAND
BRODIE INDUSTRIAL TRUCKS, INC.
(CONTACT MALDEN, MASS.)

MARYLAND: BALTIMORE
FALLSWAY SPRING & EQUIPMENT CO.
CORNER FALLSWAY & LEXINGTON

MASSACHUSETTS: BOSTON (MALDEN 48)
*BRODIE INDUSTRIAL TRUCKS, INC.
50 COMMERCIAL STREET, MALDEN 48

MICHIGAN: BATTLE CREEK
CLARK EQUIPMENT COMPANY
INDUSTRIAL TRUCK DIV. PLANT

DETROIT 2
*CLARK EQUIPMENT COMPANY
6520 CASS AVENUE
Service: INDUSTRIAL TRUCK SERVICE, INC.
8815 HARPER AVENUE

MINNESOTA: MINNEAPOLIS 2
*MATERIAL HANDLING ENGINEERS
225 SOUTH 5TH STREET, ROOM 201
Service: SMITH-DUNN COMPANY, INC.
2301 UNIVERSITY AVENUE, S. E.

MISSOURI: KANSAS CITY 6
*CLARK EQUIPMENT COMPANY
1009 BALTIMORE AVENUE
Service:
LIFT TRUCK SERVICE & SUPPLY
NORTHWEST 15TH AND McGEE STREETS

ST. LOUIS 8
*MATERIALS HANDLING EQUIPMENT CORP.
3820 WASHINGTON BLVD.
Service:
FORK LIFT TRUCK SERVICE CO.
511 CHANNING STREET

AUTHORIZED CLARK DEALERS

NEW JERSEY: JERSEY CITY
*JERSEY INDUSTRIAL TRUCKS, INC.
34 EXCHANGE PLACE
Service:
BOND INDUSTRIAL MAINTENANCE CO.
51 CLARKSON STREET AT GREENWICH
NEW YORK 14, NEW YORK

NEW YORK: BUFFALO
*BRODIE INDUSTRIAL TRUCKS INC.
1450 MICHIGAN AVENUE
NEW YORK 6
*BOND INDUSTRIAL EQUIPMENT CO.
165 BROADWAY, ROOM 2200 (OFFICE)
Service and Display Room:
51 CLARKSON STREET AT GREENWICH
NEW YORK 14—also
289 BOND STREET, BROOKLYN 31
SYRACUSE
BRODIE INDUSTRIAL TRUCKS INC.
712 STATE TOWER BLDG.
ALBANY (WATERVLIET)
*INDUSTRIAL TRUCK SALES, INC.
BROADWAY AT 25TH, WATERVLIET

NORTH CAROLINA: GREENSBORO
Service Outlet only:
INDUSTRIAL TRUCK SERVICE CORP.
629 SOUTH SPRING STREET

OHIO: CINCINNATI
ROBERT C. YOUNG, P. O. BOX 96
CLEVELAND
CLARK EQUIPMENT COMPANY
522 ROCKEFELLER BLDG.
TOLEDO 10
PERCIVAL L. REYNOLDS, 2558 FULTON STREET

OKLAHOMA: TULSA
ARST EQUIPMENT COMPANY
34 NORTH MADISON

OREGON: EUGENE
PRESTON FALLER COMPANY
891 TAYLOR STREET
PORTLAND 5
PRESTON FALLER COMPANY
1220 S. W. MORRISON STREET

PENNSYLVANIA: PHILADELPHIA 8
*CLARK EQUIPMENT COMPANY
401 NORTH BROAD STREET
Service:
PHILADELPHIA ENGINE REBUILDERS, INC.
330 WEST QUEENS LANE
PITTSBURGH
*MATERIAL HANDLING INCORPORATED
319 THIRD AVENUE

SOUTH DAKOTA: SIOUX FALLS
CENTURY EQUIPMENT & SUPPLY CO.
22 WEST 7TH STREET

TENNESSEE: MEMPHIS 3
*FRED J. VANDEMARK COMPANY
1110 UNION AVENUE

TEXAS: DALLAS
*T. G. FRAZEE
1012 FIRST NATIONAL BANK BLDG.
Service:
TRUCK EQUIPMENT COMPANY
2409 COMMERCE STREET
HOUSTON
*T. G. FRAZEE, 810 PETROLEUM BLDG.

UTAH: SALT LAKE CITY
A. J. ISAACSEN, JR.
45 SOUTH 3RD WEST STREET

VIRGINIA: NORFOLK
*McLEAN-SHAND, INC.
955 WEST 21ST STREET

WASHINGTON: SEATTLE 1
*PRESTON FALLER COMPANY
1921 MINOR AVENUE
SPOKANE 9
PRESTON FALLER COMPANY
EAST 41 GRAY AVENUE

WISCONSIN: MILWAUKEE 2
*CLARK EQUIPMENT COMPANY
759 NORTH MILWAUKEE AVENUE, ROOM 623
Service: LIFT TRUCK SERVICE CO.
5710 WEST NATIONAL AVENUE

DISTRICT OF COLUMBIA: WASHINGTON
CLARK EQUIPMENT COMPANY
927 15TH STREET N. W.

TERRITORY OF HAWAII: HONOLULU
*PRESSED STEEL CAR COMPANY
538 REED LANE, P. O. BOX 300

*Sales and Service.

For Names and Addresses of Export Distributors, write to: Export Division, Clark Equipment Co., Battle Creek, Mich., U.S.A.

GENERAL NEWS

(Continued from page 145)

Missouri Pacific to Publish History

In preparation for its centennial next year, the Missouri Pacific has arranged with Dr. John Bakeless, of New York and Seymour, Conn., to prepare a history of the origin and building of the railroad, and of its contributions to the development of the territory it serves.

Dr. Bakeless, a graduate of Williams College and Harvard University, and a veteran of both World Wars, has had extensive experience in writing, editing and teaching. He is the author of a number of magazine articles and of several books of an historical nature, including biographies of Christopher Marlowe, Daniel Boone and Lewis and Clark.

Faricy Made Honorary Member Of M.R.S. Veterans Group

William T. Faricy, president of the Association of American Railroads, has been made an honorary member of the Second Military Railway Service Veterans Organization. The membership card was presented to Mr. Faricy in his Washington, D. C., office on July 5 by Colonel Herbert Qualls, the executive officer of the Headquarters and Headquarters Company of the Second Military Railway Service from its activation in 1943 until the end of the war.

In making the presentation, Colonel Qualls said that Mr. Faricy was being honored because of his official position with the American railroads and because most of the members of the organization are railroad employees. The Second Military Railway Service Veterans Organization is composed of the officers and enlisted men who were assigned to that unit during the war. Mr. Faricy was recently made an honorary member of the Military Railway Service Veterans, whose honorary director general is Major General Carl R. Gray, Jr., administrator of veterans affairs.

Undercharges-Overcharges Bill Signed by President

Time limits within which court actions may be brought by or against carriers for recovery of undercharges or overcharges are now uniformly two years as to all types of carriers subject to the Interstate Commerce Act. They were made so by recently enacted legislation signed by President Truman on June 29.

The legislation, Public Law 138, came out of a bill (S.257) sponsored by Senator Reed, Republican of Kansas. It amended those provisions of the Interstate Commerce Act which relate to actions by or against motor carriers, water carriers, and freight forwarders for the recovery of undercharges or overcharges. The two-year time limit already applied

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Rolling Stock

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Here's the tested, tough protective coating far superior to paints and cut-back asphalt products. It gives a rich, dull black finish.

Applied with brush, trowel, or spray. It's the most practical, low-cost rust preventative for roofs, interiors, and underframes of steel freight and refrigerator cars, covered hopper cars used for soda ash, lime and similar products, ice bunkers and equipment exposed to acid fumes and gases. Just the thing for steel bridges, cooling system ducts and sumps, outside storage tanks, tool houses and bins.

- Protects against rain and moisture
- Protects against salt brine
- Protects against acid and alkali fumes
- It's odorless
- It's non-toxic
- It's vermin-proof

Mortex No. 4 adheres to any clean, dry surface. Will not run, sag, blister or craze at temperatures up to 250° F.

TRY IT YOURSELF!

While most railroads get Mortex No. 4 in the 55-gallon drums, you can order a one or five-gallon test can with easy directions. Put it through your own comparison tests.

Write for literature

J. W. MORTELL CO.
Technical Coatings since 1895

with respect to such actions against railroads. As to actions by or against motor carriers and forwarders, and actions by water carriers for the recovery of undercharges, the act previously provided no time limits; and it thus left such actions subject to the statutes of limitations of the various states.

The time limit within which an action could be brought for recovery of overcharges from some water carriers was previously three years. In cutting it to two, the act made a like cut in the time limit for filing reparations claims against water carriers. It also broadened the overcharges and reparations provisions of Part III to cover all common carriers by water subject to that part. Previously, these provisions had applied only to water carriers which are "engaged in transportation. . .(1) by way of the Panama Canal, or (2) as a common carrier by water on the high seas or the Great Lakes on regular routes from port to port." The Interstate Commerce Act now has no reparations provisions relating to motor carriers or freight forwarders, and the amendments did not change that situation.

The House committee on interstate and foreign commerce's favorable report on the legislation said that some question had been raised as to whether the time limits imposed upon proceedings against carriers "would have application to the efforts of the government to recover unlawful overcharges." Presumably, the question related to the pending complaints whereby the Department of Justice is seeking reparations from the railroads on the basis of allegations that freight rates paid by the government on various shipments during World War II were unreasonable. The House committee made this comment:

"The committee, in approving the bill, has done so with the sole object in mind of placing the carriers covered by parts II, III, and IV of the act on the same footing with the carriers covered by part I insofar as the matter of limitations on proceedings is concerned. In so doing it has not attempted to determine that the existing limitations of part I do or do not apply to proceedings instituted by the United States but has left that question for determination judicially as appropriate cases may arise."

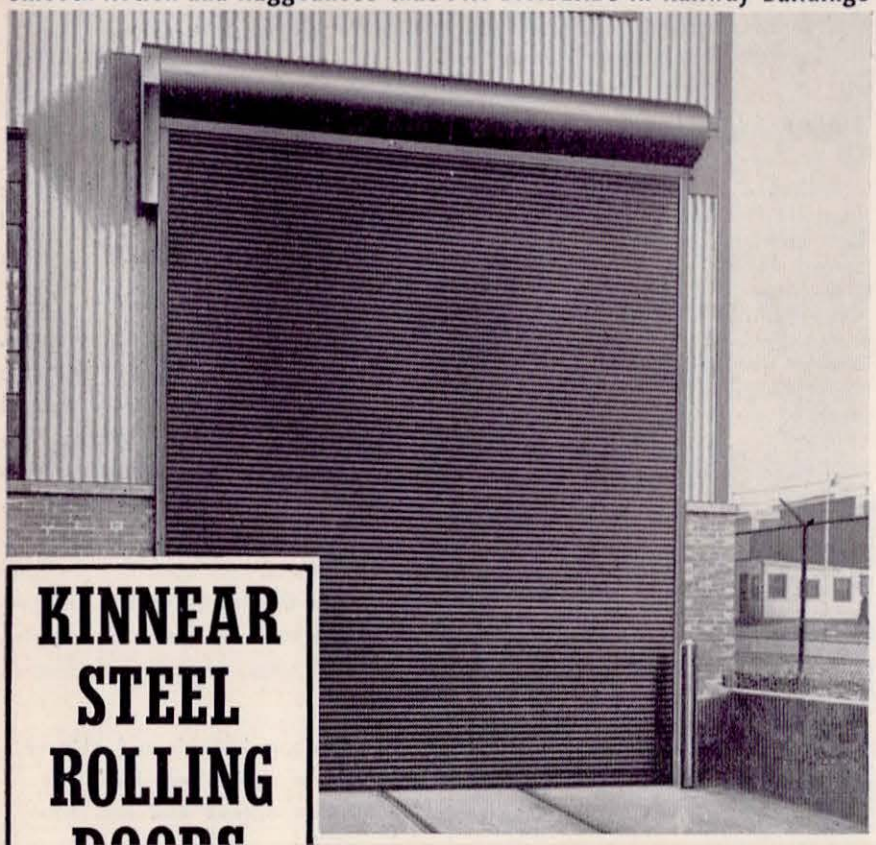
Postpones Hearing on Southern Bulwinkle-Act Application

The Interstate Commerce Commission has postponed "to a date to be hereafter fixed" the hearing which had been scheduled for July 19 at Atlanta, Ga., on the rate-procedures agreement proposed by Southern railroads. The proceeding is docketed as Section 5a Application No. 6, the agreement having been filed for commission approval under section 5a of the Interstate Commerce Act, which was added last year by the Bulwinkle-Reed Act.

C. of N. J. Polls Commuters On Saturday Travel Needs

The Central of New Jersey on July 13 will distribute questionnaires on its westbound and southbound trains asking commuters for information about their Saturday travel needs. The distribution of the questionnaires was announced by the road, through E. T. Moore, chief executive officer, in newspaper advertisements on July 7. "Eighty-two years ago," the advertisement said, the C. of N. J. "was confronted with the problem: What to do about train service on Sundays? That problem was solved by the historically interesting Jersey Central General Order No. 2: 'From and after this date, no trains or engines must be run on this road on Sundays, except through express passenger trains and stock trains, the latter to move only on the ground of imperative necessity and not for the profit of the company.' That order represented the railroad's attempt to conform to the thinking and habits of the public as they existed in 1867. Our thinking and habits have changed greatly and now, 82 years later, the railroad is faced with the problem: What to do about train service on Saturdays?. . . . We have readjusted our Saturday schedules from time to time

Smooth Action and Ruggedness that PAY DIVIDENDS in Railway Buildings



KINNEAR STEEL ROLLING DOORS

Above installation shows how hood of Kinnear Rolling Door can be mounted on building exterior where desired. May also be concealed above lintel or mounted on inside wall.

You save in at least three ways when you equip service openings with Kinnear Steel Rolling Doors. First, their smooth, easy, coiling upward action gives you full use of all surrounding floor and wall space. Materials, rolling stock, freight, *anything* can be stored within an inch or two of the doors, inside or out, without impeding their operation. They open completely out of the way of traffic, coiling compactly out of wind's reach.

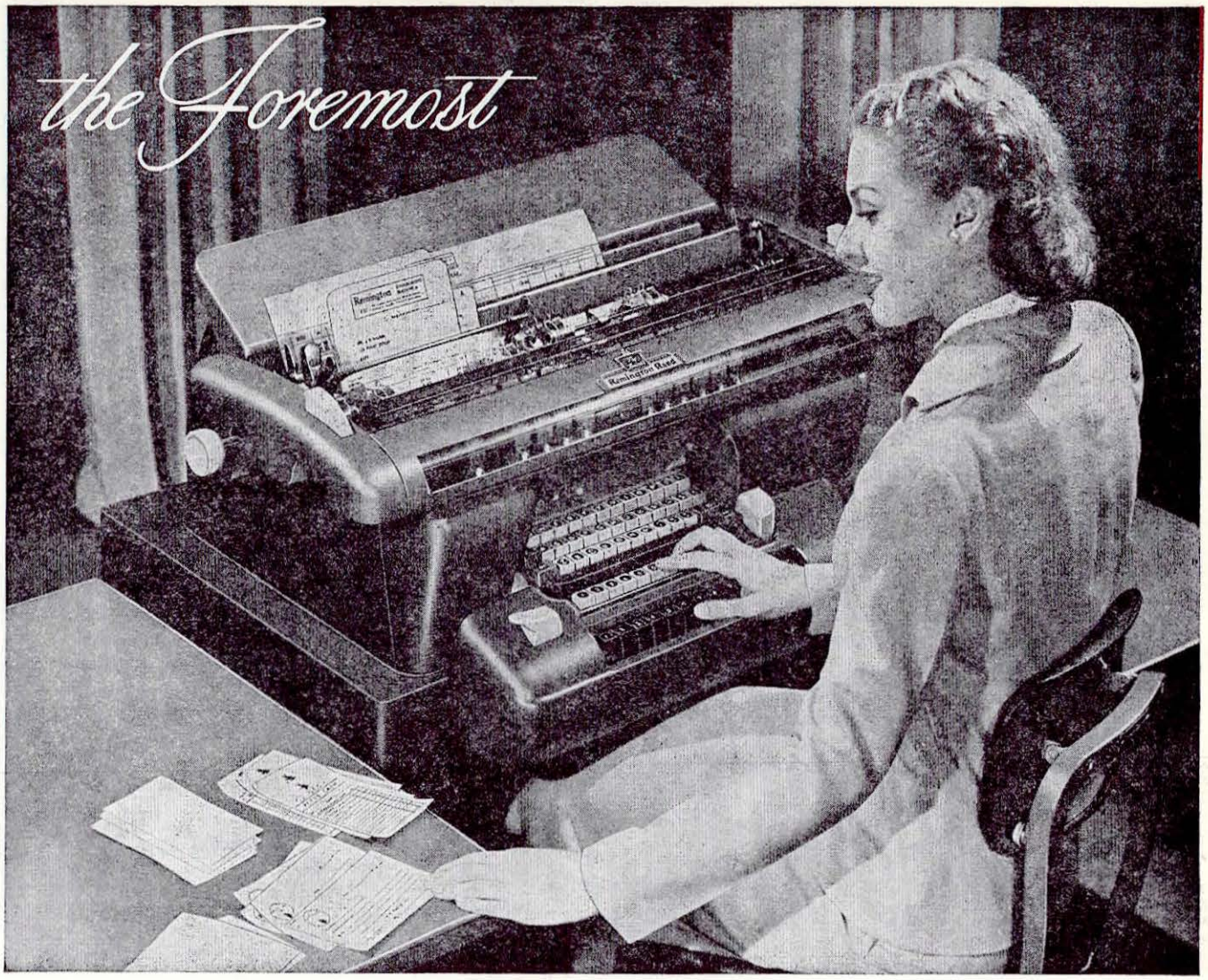
Second, Kinnear's neat, strong curtain of interlocking steel slats assures long, dependable, low-maintenance service. Upkeep costs are negligible.

Third, the all-metal construction of Kinnear Rolling Doors gives you extra protection against fire, intruders, wind and storm damage, and other hazards.

Years of actual use in hundreds of railway buildings prove the economical high efficiency of Kinnear Rolling Doors. Motor or manual control. Easily installed in old or new buildings. Any size. Write for details today!

The KINNEAR Manufacturing Co.
Factories: 2020-40 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in Principal Cities

KINNEAR ROLLING DOORS



the one bookkeeping machine for railroads designed to speed and save on your payrolls...

and here's why... The alert executive today is most conscious of reducing all costs, and this new Remington Rand machine has been geared to eliminate administrative waste-holes. It produces all the accounting records needed by railroads more efficiently and more economically than ever before. Here is how:

Faster results... every feature of this bookkeeping machine has been electrified. Balances are computed and printed automatically, and improved tabulation and high-speed timing eliminate operator-strain—increase operator-worktime.

Simpler operation... two, three or more related records—every form you need for payrolls, freight claim accounting, or any other application—are produced simultaneously—records for every breakdown, for every necessary department. New "snap-on" registers give extra flexibility...they're easily repositioned for any new application.

New functional design... many new, special features guarantee operator-owner appeal. This streamlined beauty has new organ type, finger-grooved keys—and uniform impressions are assured. The writing line is completely visible, and register totals are magnified for even easier reading. Yes, in every way this new machine is designed to speed and save in your accounting.

But see for yourself. Call your nearby Remington Rand representative, or write for free booklet, "Fashioned for Business Administration." Remington Rand Inc., Dept. RA-7, 315 Fourth Ave., New York 10, N. Y.

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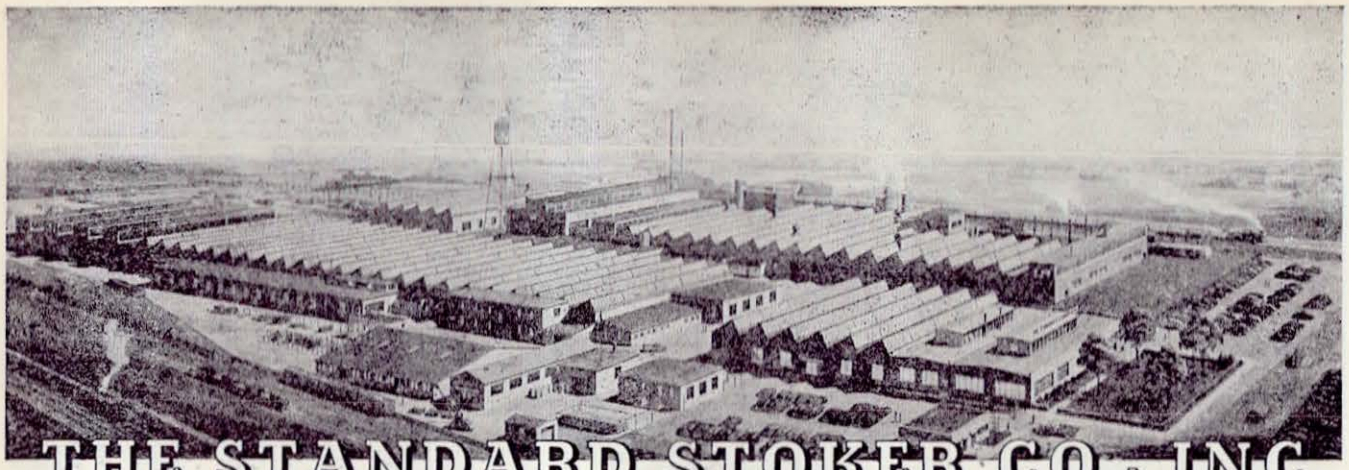
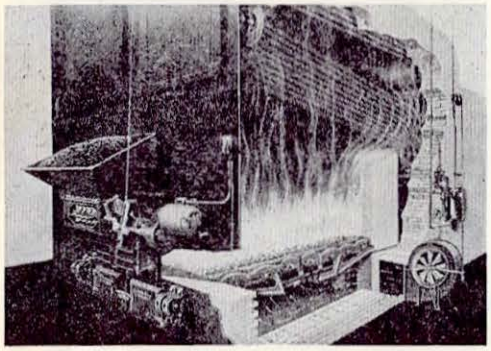
Remington Rand
BOOKKEEPING MACHINE



THE STANDARD STOKER CO., INC.

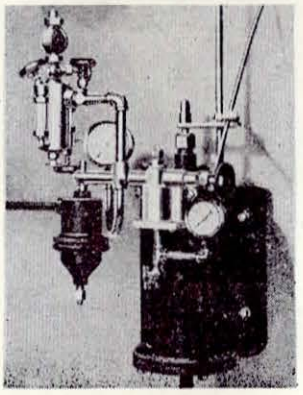
Announces 3 NEW PRODUCTS

THE CHICAGO AUTOMATIC STOKER



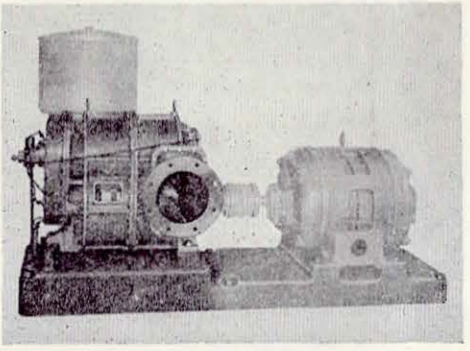
The Chicago Automatic Spreader Type Stoker is designed for industrial boilers up to 1000 HP. Many years of outstanding performance firing all types of boilers demonstrates its reliability in service. Distribution of fuel is positive and efficient—it is accomplished by adjustable distributor blades outside the furnace proper. Fly ash problems are minimized by a unique grate arrangement.

A-JACKS BOILER REGULATOR



The A-Jacks Boiler Regulator is a simple control system with 20 years of successful performance in regulating fuel-draft requirements. Uniform boiler pressures are maintained regardless of steam demands and fluctuating boiler conditions. It is of the Position Type using steam from the boiler as the actuating medium.

THE STANDARDAIRE BLOWER



The Standardaire Blower is a positive pressure blower using the axial-flow principle. It is a light-weight, high-speed, service tested unit for handling gas or air under pressure or vacuum from 20 cfm to 15,000 cfm. Important design characteristics make the Standardaire Blower suitable for a wide range of applications—serving railroads and industry in general.

We welcome your inquiries. Bulletins for the new products will be furnished upon request.

These three new products were selected only after careful study and research—they are ideally suited to our modern foundry and large facilities for precision machining.

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The excellent standing of these products will be further enhanced by our experience in the manufacture of locomotive stokers and other railroad equipment.

THE STANDARD STOKER COMPANY, INC.

NEW YORK • CHICAGO • ERIE • MONTREAL

the one bookkeeping machine for railroads designed to speed and save on your payrolls...

and here's why... The alert executive today is most conscious of reducing all costs, and this new Remington Rand machine has been geared to eliminate administrative waste-holes. It produces all the accounting records needed by railroads more efficiently and more economically than ever before. Here is how:

Faster results... every feature of this bookkeeping machine has been electrified. Balances are computed and printed automatically, and improved tabulation and high-speed timing eliminate operator-strain—increase operator-worktime.

Simpler operation... two, three or more related records—every form you need for payrolls, freight claim accounting, or any other application—are produced simultaneously—records for every breakdown, for every necessary department. New "snap-on" registers give extra flexibility...they're easily repositioned for any new application.

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BOOKKEEPING MACHINE

Progress that pays off in Patronage

When you're thinking about patronage-winning improvements and refinements, don't overlook the possibilities offered by these modern brake equipments.

The 24-RL Road Locomotive Brake Equipment permits *any* desired combination of braking functions to be incorporated at *any* time into *any* type of road locomotive—diesel, steam, or electric. Selection of the desired combination can be deferred until locomotive construction is practically completed . . . or altered after the locomotive is in service, if a change in assignment should make this desirable.

HSC Electro-Pneumatic Control. This is ideal equipment for modern, high-speed trains. Braking impulses are transmitted to all cars simultaneously, permitting later application and earlier release. This brings definite improvement in average speeds, without increasing top speeds.

Speed Governor Control, combined with HSC equipment, automatically proportions braking pressure to speeds, affording maximum retardation at all times.

"AP" Decelostat. Also available with HSC equipment, the Decelostat automatically softens braking pressure if wheel slip impends.

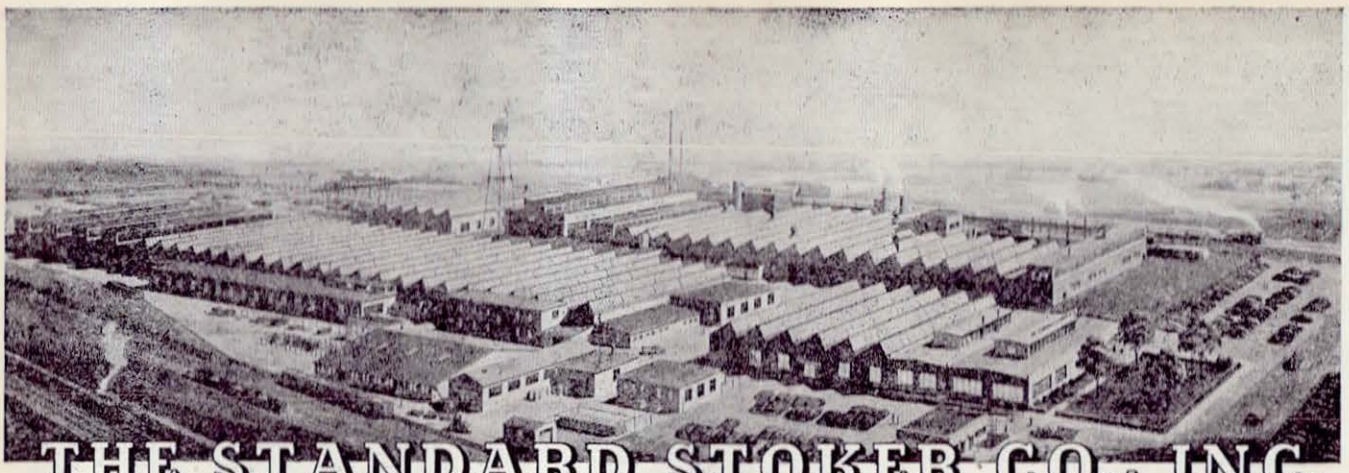
Westinghouse-Union Hot Bearing Detector gives immediate warning of abnormal temperature rise in any bearing; visual signal in the car affected—audible and visual signal in the engine cab.

These modern developments are now serving on many major roads, helping to implement the progress that pays off in patronage.

Brakes are Basic to Railroad Progress

Westinghouse Air Brake Co.

WILMERDING, PA.



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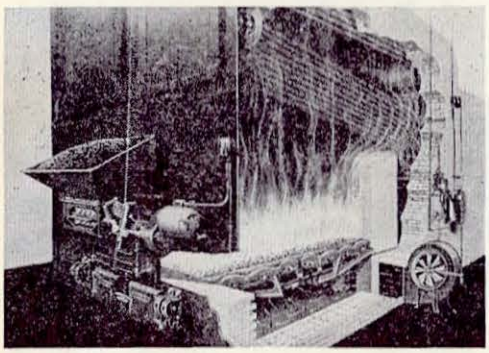

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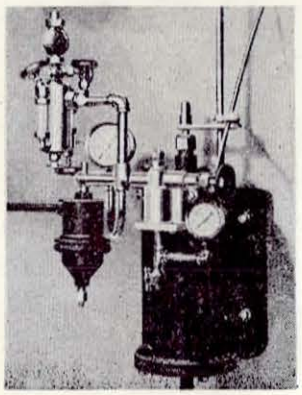

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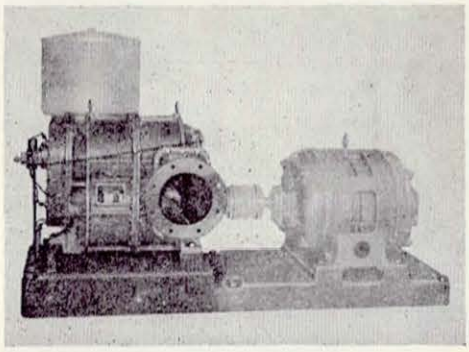

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THE STANDARD STOKER COMPANY, INC.

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in an attempt to keep pace with the transition to a shorter work week. The Monday-to-Friday work week is now so widespread as to be almost universal and we believe that the time has come for us to stop guessing and ask you to tell us what your travel needs are on Saturday."

Right Pictures—Wrong Order

In the account of the 53rd annual convention of the American Association of Railroad Superintendents, which began on page 81 of the *Railway Age* for June 25, the portraits of the association's re-

Fred Diegtel

tiring and incoming presidents were inadvertently reversed. The pictures appear here in their proper order, with Fred Diegtel, superintendent of the Delaware,

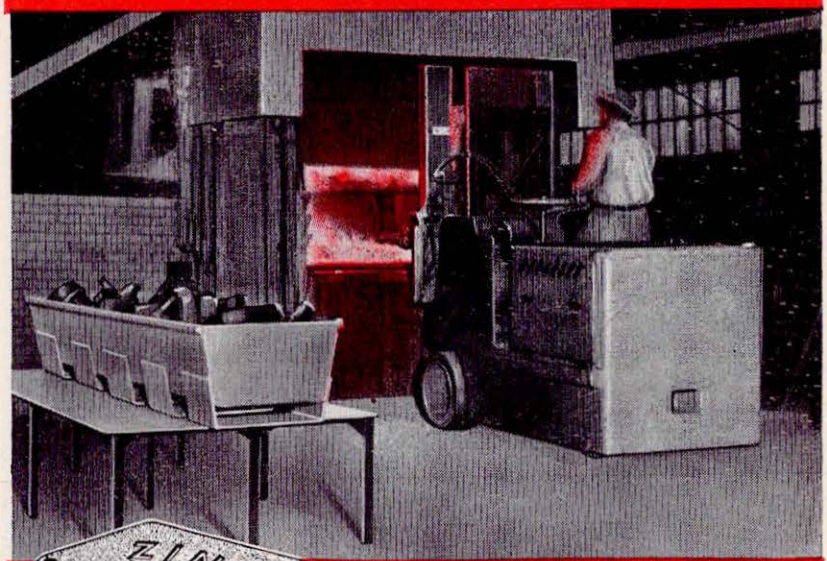
S. M. Gossage

Lackawanna & Western at Hoboken, N. J., the newly elected president, above, and S. M. Gossage, department of personnel, Canadian Pacific, Montreal, Que., retiring president, below.

Eastern Railroads to Study Competitive, Policy Problems

The Eastern railroads have created a committee to study the problems confronting the railroads as a result of public policy which provides transportation facilities in competition with the railroads for charges which are not fully

ANOTHER TOUGH HAZARD PROBLEM SOLVED BY Battery-Powered TRUCKS AT W. J. BULLOCK, INC.



Battery-powered industrial truck charging smelting furnace. Wire screen protects operator.

Charge fiery brass smelting furnace . . .

Cut 2 hours from smelting cycle . . .

Save hot, fatiguing labor of 5 men.

An electric industrial truck is used as a furnace charger at the W. J. Bullock smelting and refining plant in Fairfield, Alabama. Flames leap out furnace door making a battery-powered truck mandatory. A ten-foot long ram-attachment inserts ton loads of scrap into furnace . . . a rotating head spills load directly into furnace. Labor of 5 men is saved, releasing them for other work. 2 hours cut from smelting cycle. Heat loss during loading greatly reduced.

A fleet of sturdy battery-powered trucks speeds all handling in the Bullock plant. Trucks work 24 hours a day, seven days a week with practically no down time. Move bales, drums, slabs, pigs, ingots into or out of boxcars, production and storage. Provide fireproof motive power with utmost dependability for round-the-clock handling throughout all operations.

Another example of electric truck safety and sturdiness helping industry—while providing material handling *at lowest cost per unit moved.* This criterion, rather than initial investment, explains why so many industries prefer battery-powered trucks!

THE ELECTRIC INDUSTRIAL TRUCK ASSOCIATION
29-28R Forty-first Avenue, Long Island City 1, N. Y.

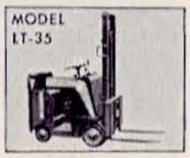
Get MAXIMUM PRODUCTION

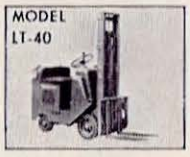
from both men and machines with

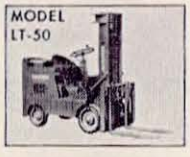
TOWMOTOR **MH***

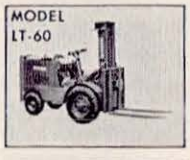
**MH is MASS HANDLING—the systematic movement of the most units, in the shortest time, at the lowest cost.*

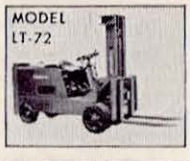
PARTIAL LIST OF TOWMOTOR MODELS

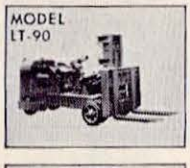












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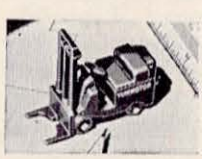
actual scale 1/4"=1' $1.00 each



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THE ONE-MAN-GANG

FORK LIFT TRUCKS *and* TRACTORS

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compensatory. Walter J. Tuohy, president of the Chesapeake & Ohio, is chairman of the committee, and other members are W. S. Franklin, president, Pennsylvania; G. Metzman, president, New York Central System; R. B. White, president, Baltimore & Ohio; William White, president, Delaware, Lackawanna & Western; L. F. Whittemore, president, New York, New Haven & Hartford, and R. E. Woodruff, president, Erie.

The committee will explore all phases of public policy as it adversely affects the ability of the railroads to compete on a basis of equality of treatment with other forms of transportation.

Initially, it will devote attention to the cost of providing and maintaining highways carrying traffic of heavy inter-city trucks. It will examine into the extent to which this cost is borne inequitably by private motorists and other highway users and by the taxpayers in general. The committee aims to arrive at information which may effect a basis for sound public policy in the matter of transportation costs.

New York Board of Trade Urges Transport Tax Repeal

Pointing out that practically every form of transportation now has ample facilities for carrying more passengers, the New York Board of Trade has written to all members of appropriate committees of Congress, urging complete elimination of the 15 per cent tax on common carrier passenger fares and the 3 per cent tax on common carrier freight rates.

The board points out that many people are avoiding these taxes by placing their orders for tickets either in Canada or in Panama, and urges that the reason for these taxes was to discourage public traveling during the war when the companies had to use all their facilities for troop movements and the war effort. The letter further states that the board would like to see all emergency war-time excise taxes removed, but is making special emphasis on the transportation taxes, believing that their repeal would stimulate all lines of business.

Congress Gets Proposal for $11¼ Billion Outlay for Roads

President Truman has sent to Congress a report of the Public Roads Administration which recommends that $11¼ billion dollars, in addition to present expenditures on highways, be spent over a period of not more than 20 years to correct "deficiencies" on roads of the so-called Interstate Highway System and to adapt that system "to the needs of its present traffic." The President took no position on the proposed program in his brief message which called the P.R.A. report a "useful document" and recommended it "to the consideration of the Congress in connection with such further provision as may be made for the continuance of federal aid for highway construction."

The report, a 176-page document entitled "Highway Needs of the National Defense," was prepared by P.R.A. in compliance with a provision of the Federal-Aid Highway Act of 1948 which directed the commissioner of public roads to cooperate with state highway departments in making a detailed study of the status of improvements and the principal deficiencies of the Interstate Highway System as of December 31, 1948. The Interstate Highway System comprises 37,800 mi. of road, the network having been designated by the states in cooperation with P.R.A. under authority of the Federal-Aid Highway Act of 1944.

The system as now designated serves 20 per cent of the country's highway traffic, the report said. The 1944 act authorized designation of a 40,000-mi. system, but approximately 2,200 mi. of this have been reserved "for future additions to the system, principally in urban areas," it was explained by the P.R.A. announcement summarizing the report. The announcement also said that of the $11¼ million expenditure proposed, about $5¼ million would be spent on urban sections of the presently-designated system while $6 billion would be spent on rural sections. As to the "deficiencies" which are found to require correction, the report listed "sight distances" and the width of pavements as the most important.

The suggestion that the $11¼ billion should be spent in not less than 20 years is embodied in that section of the report which said that "deficiency-correcting" improvements will be called for on "every mile" of the 37,800-mi. system "in a period no longer than 20 years." In the same connection, the report also said: "If the system is to be brought to a state of adequacy in this longest reasonable period, a capital investment averaging probably not more than $500,000,000 per year will be required. No less provision can be economically justified."

As the proposed improvements are undertaken, provision should be made for the increased traffic that may be anticipated over the 20-year period, the report also suggested. It added that this might increase the cost "to some extent, but not greatly." Meanwhile, it asserted that the proposed improvements are "needed now." It conceded that they can be deferred, but hastened to warn that "deferral means the acceptance of greater costs in lives, in convenience, and in the actual expense of vehicle operation." Completion of the proposed improvements in a period shorter than 20 years would result in "greater economic and social benefits," the report also said. And it found that the needs of national defense "require a substantially more rapid improvement."

The current federal-aid highway program contemplates expenditures by the national government totaling $450 million a year, of which $75 million is allocated to the Interstate Highway System. The general plan of the program is that the federal expenditures will be matched by outlays of the states. The P.R.A. report recommends that this program be con-

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Guides To Briggs & Stratton Factory-Trained and Supervised Service

These are important to every manufacturer of powered equipment—every distributor, dealer, and user of Briggs & Stratton 4-cycle air-cooled gasoline engines. They are assurance of continued maximum performance and efficiency of all equipment powered by Briggs & Stratton.

These signs identify authorized and qualified Briggs & Stratton service organizations—each a part of an unequalled network of such outlets, available in all parts of the United States and Canada.

Each service organization has Briggs & Stratton factory-trained men, factory-approved tools and uses, factory-approved methods and only original factory parts.

This network of supervised service organizations is the largest of its kind in the world. Supervising, training, and constantly expanding this network and service is an important part of Briggs & Stratton's continuous effort to make its engines of greatest, constant value to their users.

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"Preferred" Air-Cooled Power

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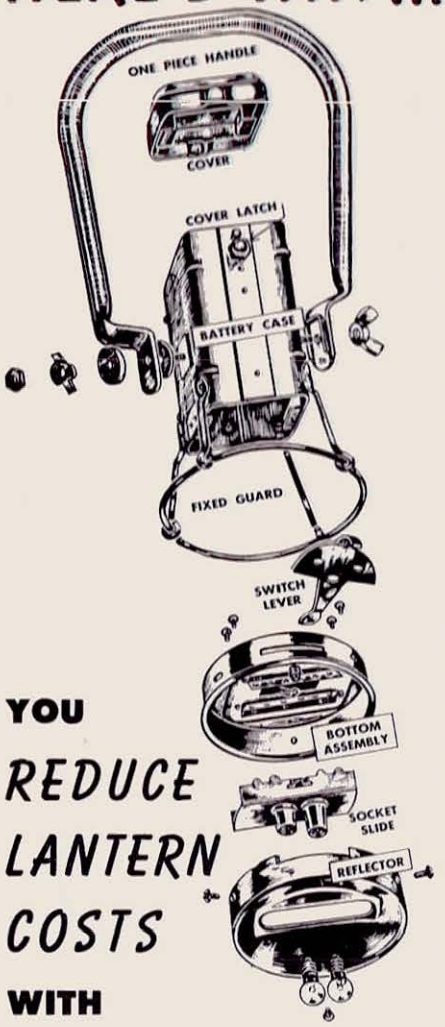

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SIMPLIFIED SWITCH DESIGN

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tinued by the federal government, while it takes on the additional program proposed in the report. Federal participation in this additional program, it is suggested, should be "in a ratio greater than the normal 50 per cent" authorized in existing highway legislation. And if a state elects to speed up the improvement of routes in the Interstate Highway System, the report also suggests, "it would seem desirable" to amend the federal highway legislation to permit future allocation of federal funds to be applied for the retirement of indebtedness incurred for such improvements exclusive of interest.

R.B.A. Would Intervene In Reparations Cases

The Railway Business Association has asked the Interstate Commerce Commission for leave to intervene in the 17 pending proceedings wherein the federal government is seeking large reparation awards on the basis of allegations that it was overcharged by the railroads on its shipments of various commodities during World War II. The R.B.A. petition put the association's members on record in opposition to the government's claims.

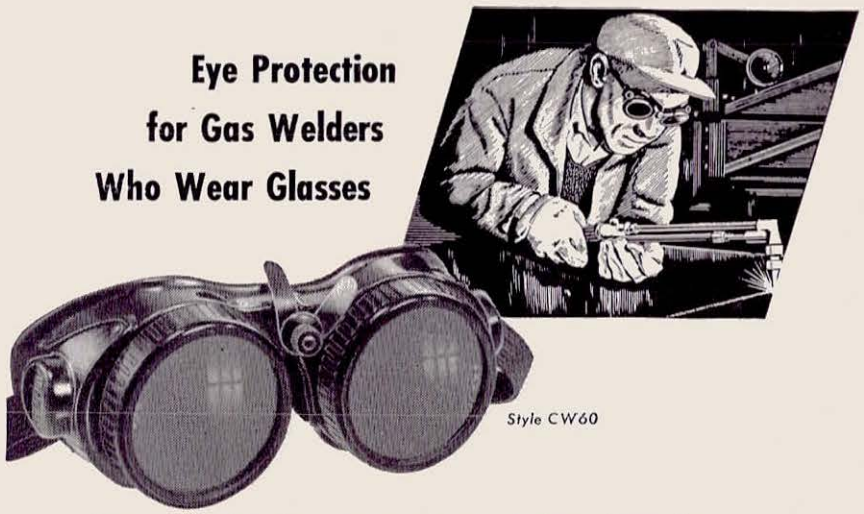
It asserted the interest of those members in adequate and efficient transportation service and their belief that the relief sought by the government, if granted, would result in subjecting them to "inefficient transportation service by rail" and to "irreparable damage and injury." Reference was also made to the fact that R.B.A. "embraces the vast majority of the railway supply industry, which depends almost exclusively upon the purchases of the defendant carriers herein." The petition added that granting of the reparations sought by the government "would work serious havoc to the railway supply industry, and the industry as a whole would thereby suffer irreparable injury and damage—contrary to the public interest."

Great Lakes Shippers Foresee Major Changes in Regulation

"Unwillingly and unwittingly we are drifting toward the nationalization of transportation, and it will take all of the intelligence and ability of transportation men throughout the country to prevent that catastrophe," Andrew H. Brown, traffic commissioner of the Cleveland, Ohio, Chamber of Commerce, and chairman of the board's legislative committee, warned some 400 members of the Great Lakes Regional Advisory Board during the group's 72nd quarterly meeting at Toledo, Ohio.

"Under these circumstances," Mr. Brown added, "our committee urges all members of the board individually to familiarize themselves with existing legis-

Eye Protection for Gas Welders Who Wear Glasses



There's comfort for wearers of prescription glasses in WILLSON Cover-All* welding goggles with the deep eye cups. And the adjustable leather bridge covers a danger spot and rests lightly on the nose. WILLSON-Weld* lenses are carefully matched for pairs; inspected for finest optical quality, and exceed Federal Specifications for filtering out ultraviolet and infrared rays.

Style DC53 Chip-Weld Goggles

WILLSON-WELD* *Glass made in shades from 3 to 14 incl. for all kinds of gas and arc welding.*

For complete information on these products and their application, as well as many more eye and respiratory protective devices, get in touch with your nearest WILLSON distributor or write us direct.

WILLSON*

*T.M.Reg.U.S.Pat.Off.

WILLSON PRODUCTS, INC., 241 WASHINGTON STREET, READING, PA.

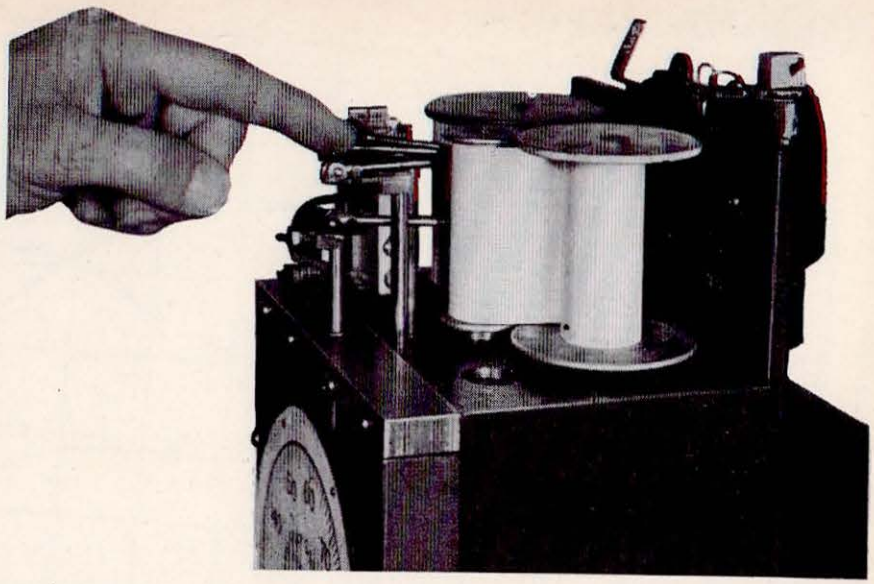
lation and to be prepared to give intelligent consideration to what we believe will be vital changes in the entire system of transportation regulation in the United States." His committee specifically urged that the board continue its opposition to repeal of, or substantial changes in, the Bulwinkle-Reed Act (section 5a of the Interstate Commerce Act); to establishment of an executive department of transportation or creation of a transportation authority, and to direct statutory rate-making.

Arthur H. Gass, chairman of the Car Service Division, Association of American Railroads, pointed out that the railroads are not sharing in the national prosperity, but that this "does not stem from any inefficiency . . . The railroads can meet all demands of industry . . . There is nothing in their physical condition that would in any way retard the economic development of the country." He also decried the theory that the railroads are "pricing themselves out of the market," stating that "The railroads don't price themselves. The government does it. In addition there is no market unless everybody is competing under equal circumstances, which is not the case in transportation." "You have nothing to say about the price of your shirt, but you do have something to say about the cost of bringing it to you," he added, explaining that only in the case of utilities like the railroads do the users have a "right to make their thoughts known."

Grove Patterson, editor-in-chief of the Toledo Blade, speaking at the formal luncheon which closed the sessions, described government ownership of transportation as "sheer tragedy," stating that "we are not sufficiently proud" of the fact that "private ownership and operation have given America the finest transportation system in the world." To emphasize his point, he contrasted the efficiency of private operation of railroads with the inefficiency of government operation in other countries, and in this country during World War I.

The board considered at some length the possible effect of the 40-hr. week on l.c.l. service, expressing the hope that any necessary reductions in personnel or services would be taken "only after careful consideration of the effect on competitive traffic or on service." The board also approved increasing use by railroads of highway vehicles in coordinated rail-truck service, and commended the growing improvement in merchandise car service and the extension of such operations. It also turned down a proposal to abolish its car efficiency committee, submitted by the committee itself. C. A. Skog, vice-president and general manager of the Grand Trunk Western, was elected chairman of that committee, to succeed Carl L. Jellinghaus, vice-president of the New York Central, who has recently been transferred from Detroit, Mich., to New York. A report on freight claims was presented by J. A. MacLellan, special representative, Freight Claim Division, A. A. R.

The board's next meeting will be at Buffalo, N. Y., on September 27 and 28.



Here's the Score!

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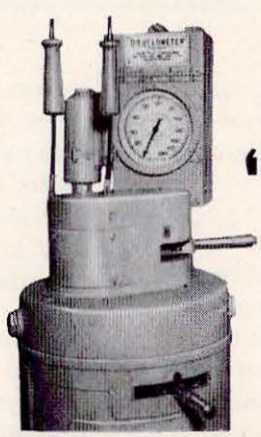

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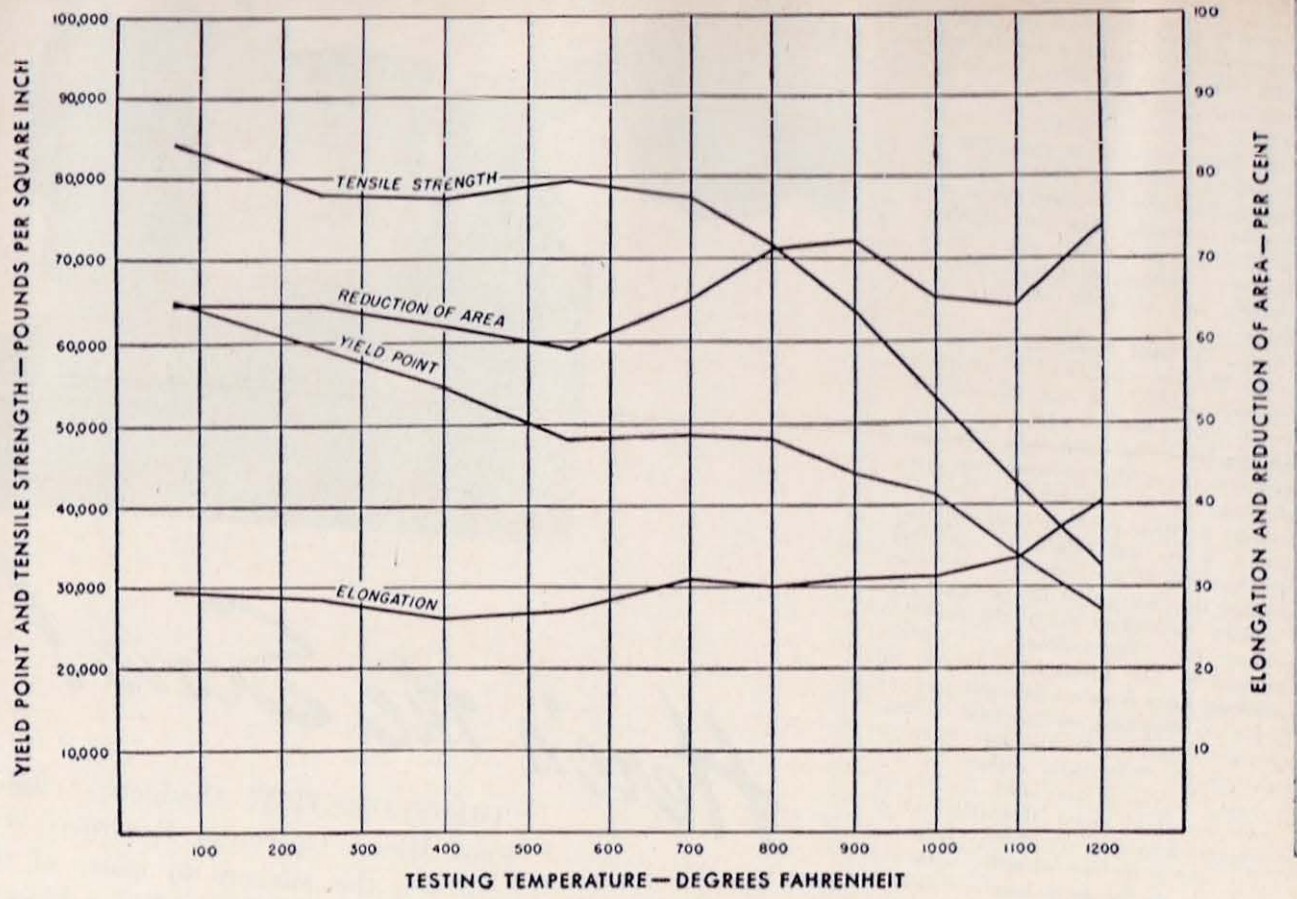

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(Average of 9 Heats)

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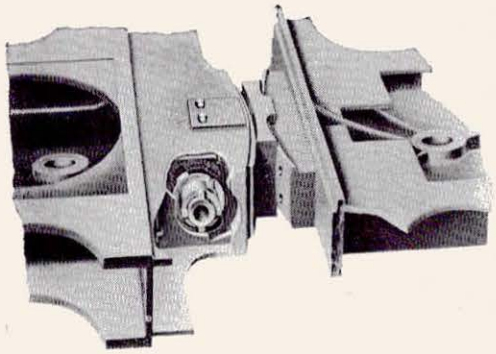

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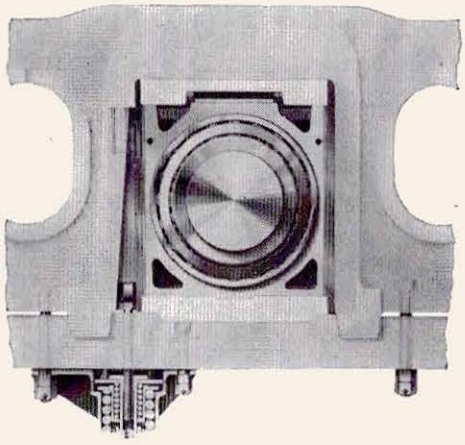

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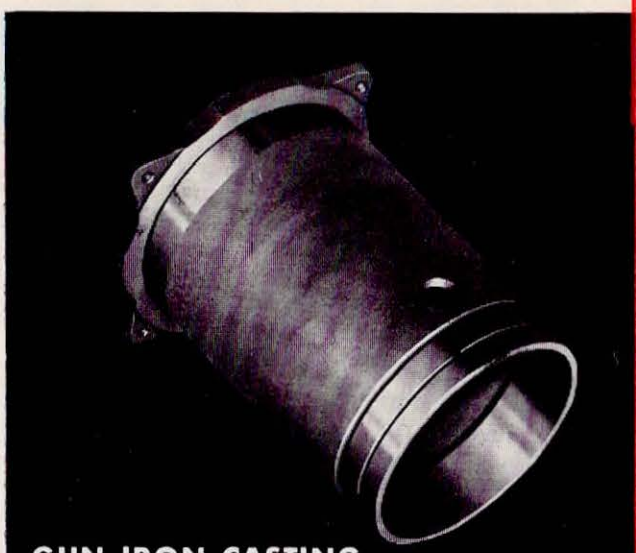

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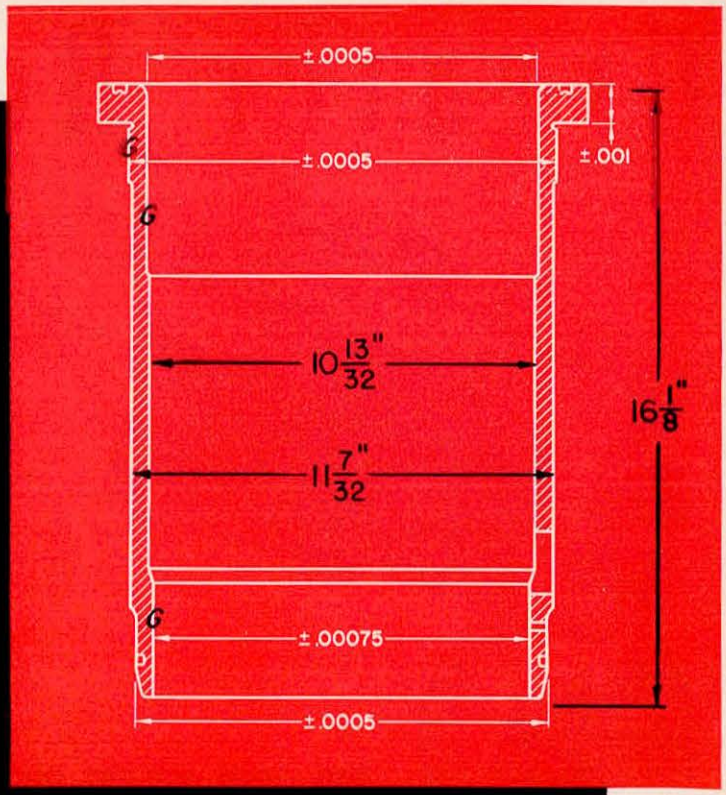

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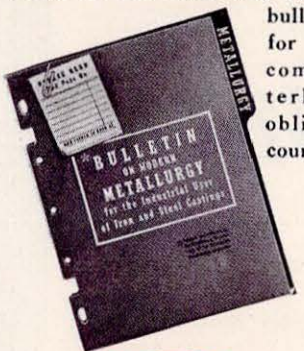

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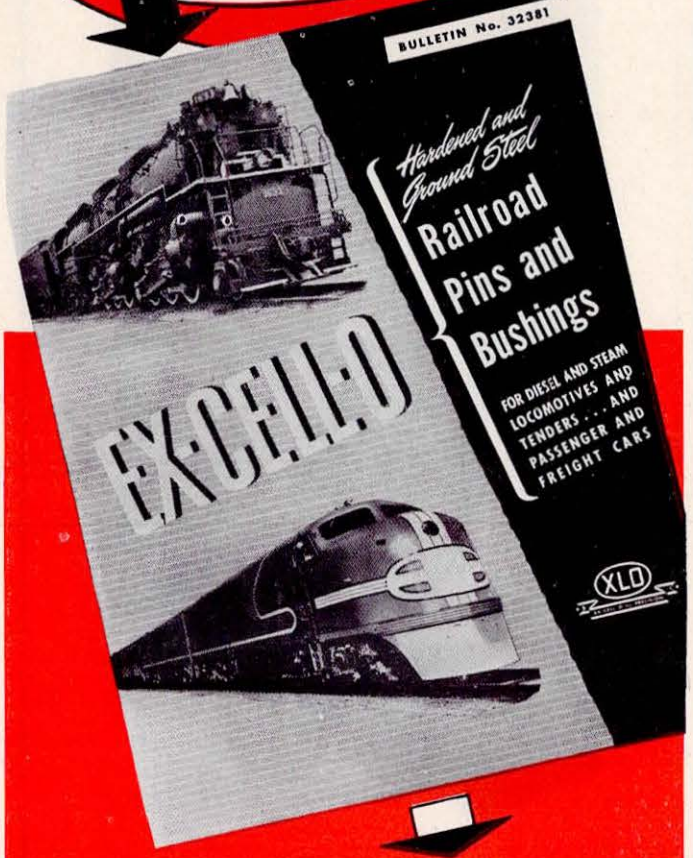
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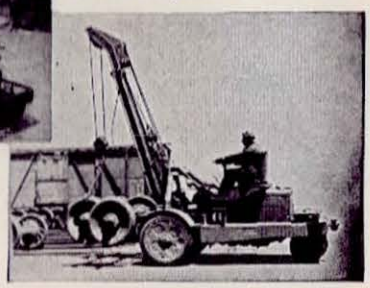

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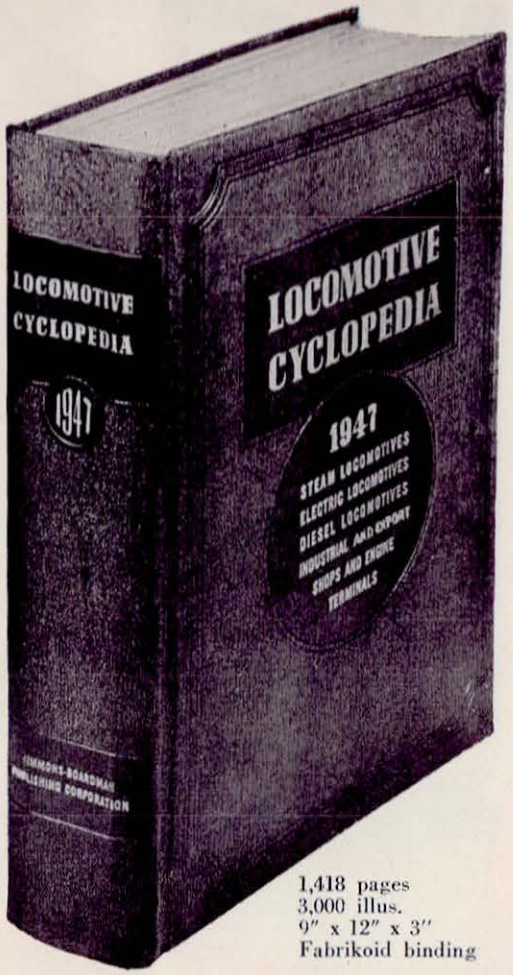

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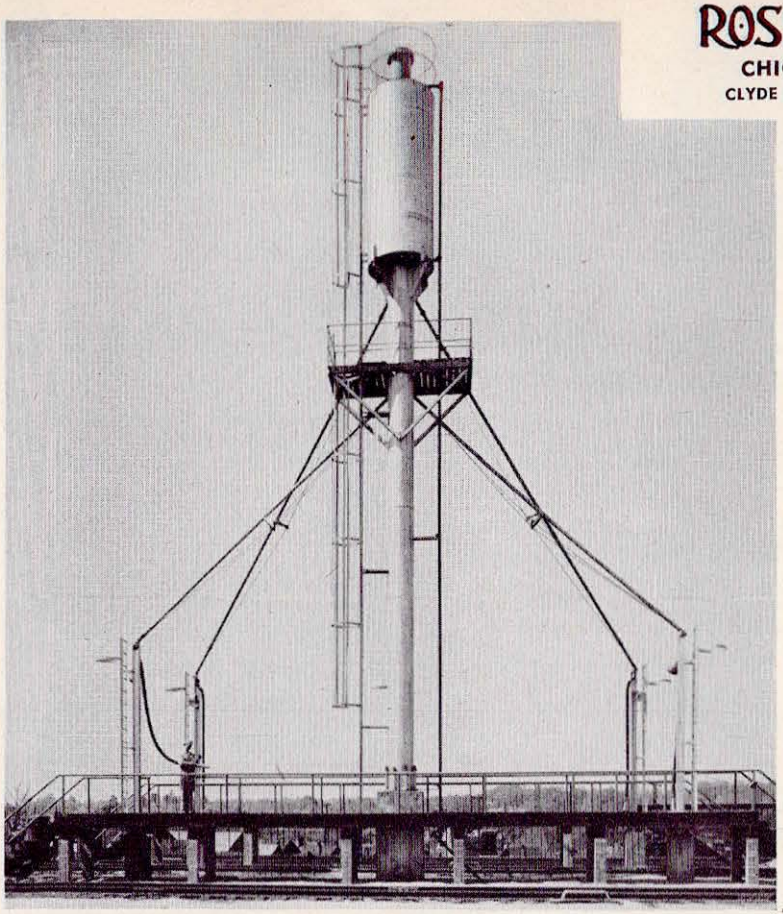

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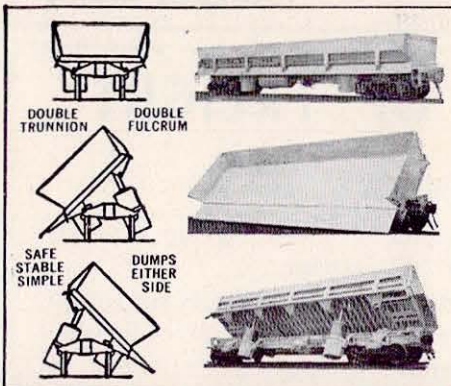

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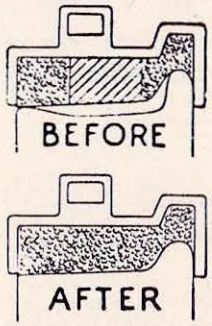

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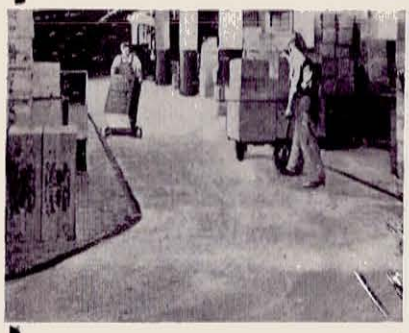

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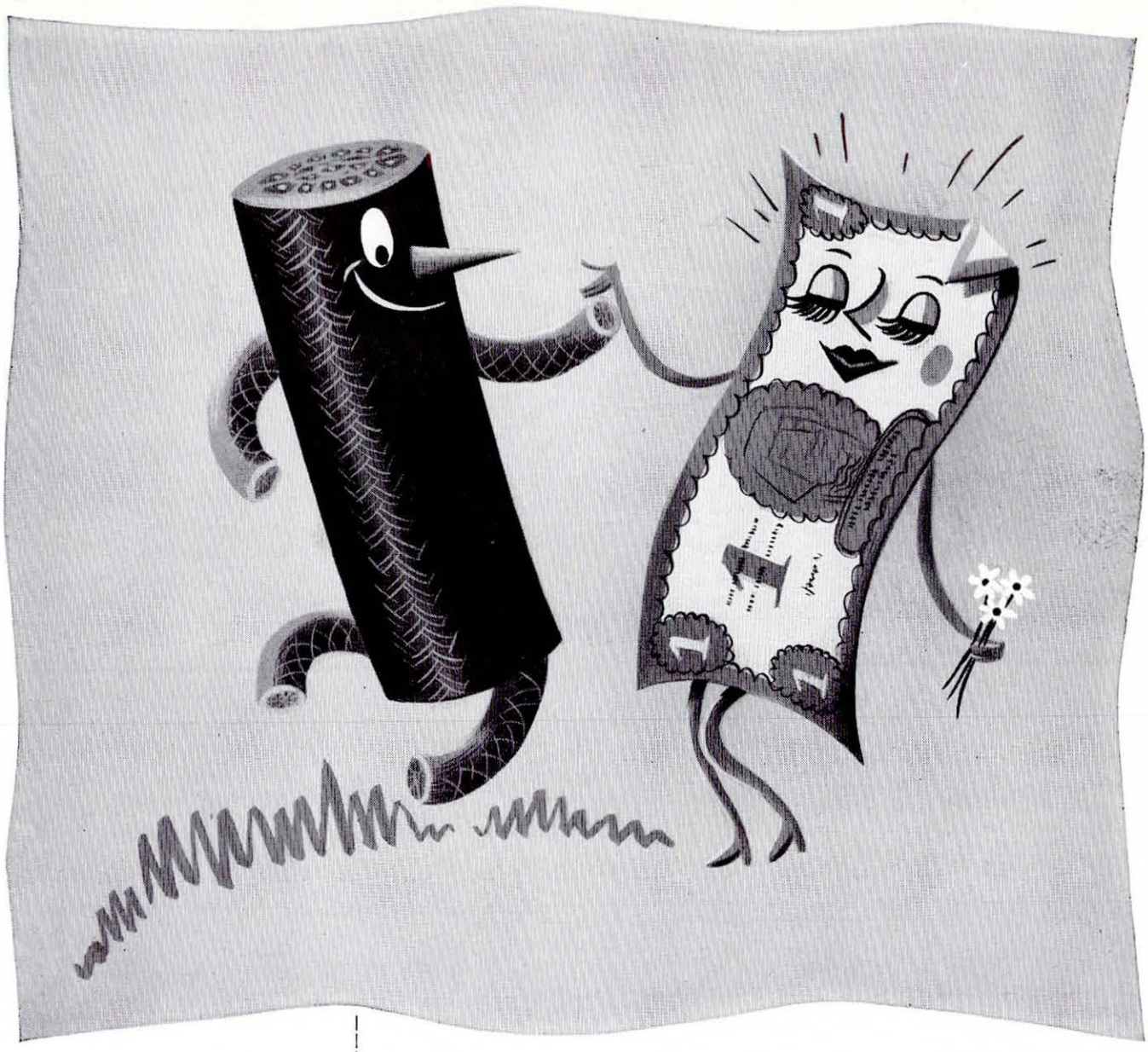

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